METRIC

MIL-H-89201/3(DMA)
29 April 1995
SUPERSEDING
MIL-H-89201
31 AUG 1990

ASSOCIATED DETAIL MILITARY SPECIFICATION

HARBOR, APPROACH, AND COASTAL CHARTS

AT SCALES 1:50,001 TO 1:100,000 (HAC 3)

This specification is approved for use by the Defense Mapping Agency, and is available for use by all Departments, and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification defines detailed requirements for the Defense Mapping Agency's (DMA) Harbor, Approach, and Coastal Charts at scales of 1:50,001 to 1:100,000 (HAC 3).

1.2 Purpose. The purpose of this specification is to assure uniformity of treatment among mapping and charting elements, primarily DMA and its contractors, engaged in a coordinated production and maintenance program for this product. Feature requirements are stated in terms of DMA's Feature/Attribute Coding Standard (FACS), to maintain consistency between various DMA production methods. The use of FACS in this specification is not intended to imply any external digital data coding standard. FACS is the internal coding standard used by DMA's Digital Production System (DPS), which is the primary intended, but not exclusive, method for production of this product at this time. The Digital Geographic Information Exchange Standard (DIGEST) Feature Attribute Coding Catalog (FACC), not FACS, is the approved coding standard for the exchange of digital geographic data, as well as the standard for DMA's Vector Product Format product line. FACC may be included in, or replace FACS in a future edition of this specification.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Director, Defense Mapping Agency, ATTN: PR, ST A-13, 8613 Lee Highway, Fairfax, VA 22031-2137 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A **AREA MCGT**

1.3 Security.

1.3.1 Security Classification. The security classification of the products generated by the use of these specifications will be the lowest category practicable. When it is necessary to assign a security classification to the product, it shall be in accordance with established national security procedures.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the current Department of Defense Index of Specifications and Standards (DODISS) and the supplement thereto, cited in the solicitation (see 6.2).

MILITARY SPECIFICATIONS

MIL-H-89201A(DMA)	-	General Military Specification for Harbor, Approach, and Coastal Charts (HAC-All Scales)

MILITARY STANDARDS

MIL-STD-2402(DMA)	-	MC&G Symbology for Graphic Products
MIL-STD-2403(DMA)	-	MC&G Product Generation Rules
MIL-STD-2408(DMA)	-	Mapping, Charting & Geodesy Glossary of Feature and Attribute Definitions

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robins Avenue, Philadelphia, PA 19111-5094.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

STANDCONTABLE 02	-	Standard Conversion Table No. 2
STANDCONTABLE 03	-	Standard Conversion Table No. 3
STANDCONTABLE 04	-	Standard Conversion Table No. 4

(Copies of the above publications are available from the Defense Mapping Agency, ATTN: TIJ, ST A-10, Fairfax, VA 220031-2137).

Chart No. 1	-	Nautical Chart Symbols and Abbreviations
PUB. 9	-	American Practical Navigator
PUBS 110-116 (LLPUB)	-	List of Lights
N M	-	Notice to Mariners (NM)
PUB117	-	Radio Navigation Aids
SDPUB	-	Sailing Directions

(Copies of the above publications are available for DoD users from the Defense Mapping Agency Combat Support Center, 6001 MacArthur Boulevard, Bethesda, MD 20816-5001. Other users may obtain these

publications from the National Ocean Service, and its authorized sales agents).

2.2 Non-Government publications.

IHO Special Pub. 46 - Correction of Echo Soundings

(Copies of the above publication are available on disc or paper format, upon request, from the International Hydrographic Organization - Monaco)

NP139 - Echo Sounding Correction Tables (3rd or latest edition)

(Copies of the above publication are available from the British Admiralty, Taunton, U.K.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for related associated detail specifications, specification sheets, or MS standards) the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Feature/Attribute data. Table I of this associated detail specification contains feature, feature attributes category, feature attribute category value, inclusion condition and specific rules necessary for the production of Harbor, Approach, and Coastal Charts, at scales of 1:50,001 to 1:100,000 (HAC 3).

3.2 Feature/Attribute category, inclusion conditions and product generation rules. *The following is an explanation of the header format for Table I:*

FCode (1) **Feature** (2)
Feature type (3)
Attributes
ACode (4) Attribute (5) Rules (7)

Inclusion conditions (6)

(1) F(Feature)Code - *Five digit alpha numeric,* Feature Attribute Coding Standard (FACS) Code assigned to each feature (e.g. 1N010 - R/R Tracks). The first two digits identify the category and subcategory to which each feature belongs (e.g., 1 - Culture Category, N = Transportation R/R subcategory).

(2) Feature - Name of feature as specified in the FACS. A feature is a physical (e.g., Bridge) or conceptual (e.g., Route - Nautical) entity of the real world which has one or more set of coordinates to be included on a product.

(3) Feature Type - designation of a feature type.

Area - More than two sets of coordinates defining a closed area; areas may span more than one map sheet or geographic area requirement.

Line - Two or more coordinate sets defining a series of line segments.

Point - One set of coordinates.

If there is more than one Feature Type for the feature, then the ACode and Inclusion conditions are stated separately for each type.

(4) A(Attribute)Code - Three digit alpha or alpha numeric character (acronym) FACS code assigned to each attribute category which identifies the attribute category (e.g., EXS - Existence Category). Attribute categories are defined by mutually exclusive sets of attribute values which are feature dependent. Attribute values relative to product are normally contained in MIL-STD-2402 under column headed "SValue", a few exceptions are contained in the inclusion conditions.

(5) Attribute - Name of attribute category required by the feature as specified in the FACS. Attribute categories are characteristics in menu form relative to a specified feature or features.

(6) Inclusion conditions - Conditions under which the feature/attribute(s) are required by the product (e.g., R/R Yard, 1N080 FACS Code, is included on a particular product only if Length >= 450m). Conditions should be stated in boolean logic.

(7) Rule - 5 digit alpha-numeric code indicating rules (listed in MIL-STD-2403) which specify requirements for feature to satisfy final production format/requirements. APPENDIX A of this associated detail specification provides the rule numbers and rule text for each feature and feature type shown on the Harbor, Approach, and Coastal Chart.

4. QUALITY ASSURANCE PROVISIONS

See MIL-H-89201A for quality assurance provisions for Harbor, Approach, and Coastal Charts.

5. PACKAGING

See MIL-H-89201A for packaging requirements for Harbor, Approach, and Coastal Charts.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory).

6.1 Intended use. Harbor and Approach and Coastal Charts (HACs) are various scale charts used for plotting ship courses in ocean waters. HACs are produced to support the naval and maritime community.

6.2 Acquisition Requirement. See MIL-H-89201A.

6.3 First article. See MIL-H-89201A.

6.4 Supersession. These specifications supersede Table I of Military Specifications for Harbor, Approach, and Coastal Charts (HAC), MIL-H-89201, 31 August 1990.

6.5 Standardization agreements. Certain provisions of this specification may be subject to international standardization agreements. When amendment, revision, or cancellation of this specification is proposed that will modify the international agreement concerned, the preparing activity will take appropriate action through international standardization channels, including departmental standardization offices, to change the agreement or make other appropriate accommodations. See MIL-H-89201A.

6.6 Subject term (key word) listing.

Bathymetry
Charting
Defense Mapping Agency (DMA)
Hydrography
Marine
Maritime
MC&G (Mapping, Charting and Geodesy)
Nautical
Navigation

6.7 Changes from previous issue. Marginal notations are not used in this detail specification to identify changes with respect to the previous issue of Table I to MIL-H-89201 due to the extensiveness of the changes.

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Extraction (1A)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1A010 MINE
AREA

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	R-2800
WID	WIDTH	

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and width >= 10 mm (map scale)

POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	-None
WID	WIDTH	

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and width < 10 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1A030 QUARRY
AREA

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	R-2800
WID	WIDTH	

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and width >= 10 mm (map scale)

POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	-None
WID	WIDTH	

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and width < 10 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1C000 PROCESSING PLANT /TREATMENT PLANT
AREA

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	L-4705
DFS	DISTANCE FROM SHORELINE	L-4722
PRO	PRODUCT CATEGORY	R-2800
WID	*WIDTH*	T-0815

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Processing Industry (1C)

1C000 PROCESSING PLANT /TREATMENT PLANT (Cont.)
AREA

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and PRO(PRODUCT CATEGORY) 6(CHEMICAL) or 18(OIL)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and width >= 5 mm (map scale)
and PRO(PRODUCT CATEGORY) 6(CHEMICAL) or 18(OIL)
and DFS(DISTANCE FROM SHORELINE) <= 100 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1D010 POWER PLANT FACILITY
AREA

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	L-4705
DFS	DISTANCE FROM SHORELINE	L-4722
WID	WIDTH	L-4730
		T-0815

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and width >= 0.8 mm (map scale)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and width >= 0.8 mm (map scale)
and DFS(DISTANCE FROM SHORELINE) <= 100 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1F010 CHIMNEY /SMOKESTACK
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-3805
HGT	HEIGHT ABOVE SURFACE LEVEL	L-4722
ZVL	Z VALUE	O-3434
		R-2746
		T-0811
		T-0815
		T-0856

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and DFS(DISTANCE FROM SHORELINE) <= 3,000 m
and HGT(HEIGHT ABOVE SURFACE LEVEL) >= 10 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1F030 COOLING TOWER
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-3805
HGT	HEIGHT ABOVE SURFACE LEVEL	L-4722
		O-3434
		T-0815
		T-0856

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Associated Industrial Structures (1F)

1F030 COOLING TOWER (Cont.)
POINT

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and DFS(DISTANCE FROM SHORELINE) <= 3,000 m
and HGT(HEIGHT ABOVE SURFACE LEVEL) >= 10 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1F040 CRANE
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	T-0812
USE	USE STATUS	

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1F070 FLARE PIPE
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-3805
HGT	HEIGHT ABOVE SURFACE LEVEL	L-4722
LOC	LOCATION /ORIGIN CATEGORY	L-4737
		O-3434
		R-2746
		T-0815
		T-0856

Inclusion Conditions:

LOC(LOCATION/ORIGIN CATEGORY) 3(ON GROUND SURFACE)
and COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
OR LOC(LOCATION/ORIGIN CATEGORY) 3(ON GROUND SURFACE)
and COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and DFS(DISTANCE FROM SHORELINE) <= 3,000 m
and HGT(HEIGHT ABOVE SURFACE LEVEL) >= 10 m
OR LOC(LOCATION/ORIGIN CATEGORY) 2(OFF-SHORE)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1H020 BATTERY
POINT

Attributes		PG Rules
DFS	DISTANCE FROM SHORELINE	T-0813

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Institutional /Governmental (1H)

1H020 BATTERY (Cont.)
POINT

Inclusion Conditions:

DFS(DISTANCE FROM SHORELINE) <= 500 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1H050 FORT
AREA

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	L-4705
DFS	DISTANCE FROM SHORELINE	L-4722
NAM	NAME CATEGORY	L-4883
WID	WIDTH	T-0815

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and width >= 7 mm (map scale)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and width >= 7 mm (map scale)
and DFS(DISTANCE FROM SHORELINE) <= 1,000 m

POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	L-4722
DFS	DISTANCE FROM SHORELINE	T-0815
NAM	NAME CATEGORY	
WID	WIDTH	

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and width < 7 mm (map scale)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and width < 7 mm (map scale)
and DFS(DISTANCE FROM SHORELINE) <= 1,000 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1J050 WINDMILL /WINDMOTOR
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-3805
HGT	HEIGHT ABOVE SURFACE LEVEL	L-4722
PRO	PRODUCT CATEGORY	O-3434
		R-2746
		T-0815
		T-0856

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Agricultural (1J)

1J050 WINDMILL /WINDMOTOR (Cont.)
POINT

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and DFS(DISTANCE FROM SHORELINE) <= 3,000 m
and HGT(HEIGHT ABOVE SURFACE LEVEL) >= 10 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1K160 STADIUM
AREA

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-4705
NAM	NAME CATEGORY	L-4709
WID	WIDTH	L-4722
		L-4813

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and width >= 1.5 mm (map scale)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and DFS(DISTANCE FROM SHORELINE) <= 2,000 m
and width >= 1.5 mm (map scale)

POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-4722
WID	WIDTH	

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and width < 1.5 mm (map scale)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and DFS(DISTANCE FROM SHORELINE) <= 2,000 m
and width < 1.5 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1L015 BUILDING
AREA

Attributes		PG Rules	PG Rules
BFC	BUILDING FUNCTION CATEGORY	D-1901	O-3422
COC	CONSPICUOUS OBJECT CATEGORY	D-7011	R-2292
DFS	DISTANCE FROM SHORELINE	L-4705	R-2293
HWT	HOUSE OF WORSHIP TYPE	L-4709	R-2837
LEN	LENGTH /DIAMETER	L-4712	T-0814
NAM	NAME CATEGORY	L-4722	
WID	WIDTH		

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Miscellaneous Features (1L)

1L015 BUILDING (Cont.)
AREA

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and width >= 0.8 mm (map scale)
OR BFC(BUILDING FUNCTION CATEGORY) 6(HOSPITAL) or 7(HOUSE OF WORSHIP) or 27(PASSENGER TERMINAL) or 31(CUSTOM HOUSE) or 32(HARBOR MASTER'S OFFICE) or 33(HEALTH OFFICE) or 35(POST OFFICE)
and width >= 0.8 mm (map scale)
OR BFC(BUILDING FUNCTION CATEGORY) 0(UNKNOWN) or 1(FABRICATION STRUCTURE) or 2(GOVERNMENT BUILDING) or 3(CAPITOL BUILDING) or 4(CASTLE) or 5(GOVERNMENT ADMINISTRATION BUILDING) or 8(MILITARY ADMINISTRATION/ OPERATIONS BUILDING) or 9(MUSEUM) or 10(OBSERVATORY) or 11(PALACE) or 12(POLICE STATION) or 13(PRISON) or 14(RANGER STATION) or 15(SCHOOL) or 16(HOUSE) or 17(MULTI UNIT DWELLING) or 18(CEMETERY BUILDING) or 19(FARM BUILDING) or 20(GREENHOUSE) or 21(GARAGE) or 22(WATERMILL/GRISTMILL) or 23(WIND TUNNEL) or 24(WAREHOUSE) or 25(ROUNDHOUSE) or 26(R/R STORAGE/REPAIR FACILITY) or 28(ADMINISTRATION BUILDING) or 29(AIRCRAFT MAINTENANCE SHOP) or 30(HANGER) or 36(BARRACKS/DORMITORY) or 37(FIRE STATION) or 38(SHED) or 39(OTHER), or 40(KENNEL) or 41(GUARD SHACK) or 51(HOTEL) or 52(DIPLOMATIC BUILDING) or 53(COURT HOUSE) or 54(NEWSPAPER PLANT) or 55(BANK) or 56(LAB/RESEARCH FACILITY) or 57(TELEPHONE EXCHANGE (MAIN)) or 58(AUDITORIUM) or 59(OPERA HOUSE) or 60(PROCESSING PLANT) or 61(POWER PLANT) or 62(PUMP HOUSE) or 64(WEATHER STATION) or 65(DEPENDENTS HOUSING/BIVOUAC AREA) or 66(COMMUNICATIONS BUILDING)
and width >= 0.8 mm (map scale)
and DFS(DISTANCE FROM SHORELINE) <= 2,000 m

POINT

Attributes		PG Rules
AOO	ANGLE OF ORIENTATION	D-1901
BFC	BUILDING FUNCTION CATEGORY	D-7011
COC	CONSPICUOUS OBJECT CATEGORY	L-4709
DFS	DISTANCE FROM SHORELINE	L-4712
EXS	EXISTENCE CATEGORY	L-4722
HWT	HOUSE OF WORSHIP TYPE	L-4813
LEN	LENGTH /DIAMETER	R-2292
NAM	NAME CATEGORY	R-2837
WID	WIDTH	T-0814

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and width < 0.8 mm (map scale)
OR BFC(BUILDING FUNCTION CATEGORY) 6(HOSPITAL) or 7(HOUSE OF WORSHIP) or 27(PASSENGER TERMINAL) or 31(CUSTOM HOUSE) or 32(HARBOR MASTER'S OFFICE) or 33(HEALTH OFFICE) or 35(POST OFFICE)
and width < 0.8 mm (map scale)
OR BFC(BUILDING FUNCTION CATEGORY) 0(UNKNOWN) or 1(FABRICATION STRUCTURE) or 2(GOVERNMENT BUILDING) or 3(CAPITOL BUILDING) or 4(CASTLE) or 5(GOVERNMENT ADMINISTRATION BUILDING) or 8(MILITARY ADMINISTRATION/ OPERATIONS BUILDING) or 9(MUSEUM) or 10(OBSERVATORY) or 11(PALACE) or 12(POLICE STATION) or 13(PRISON) or 14(RANGER STATION) or 15(SCHOOL) or 16(HOUSE) or 17(MULTI UNIT DWELLING) or 18(CEMETERY BUILDING) or 19(FARM BUILDING) or 20(GREENHOUSE) or 21(GARAGE) or 22(WATERMILL/GRISTMILL) or 23(WIND TUNNEL) or 24(WAREHOUSE) or 25(ROUNDHOUSE) or 26(R/R STORAGE/REPAIR FACILITY) or 28(ADMINISTRATION BUILDING) or 29(AIRCRAFT MAINTENANCE SHOP) or 30(HANGER) or 36(BARRACKS/DORMITORY) or 37(FIRE STATION) or 38(SHED) or 39(OTHER), or 40(KENNEL) or 41(GUARD SHACK) or 51(HOTEL) or 52(DIPLOMATIC BUILDING) or 53(COURT HOUSE) or 54(NEWSPAPER PLANT) or 55(BANK) or 56(LAB/RESEARCH FACILITY) or 57(TELEPHONE EXCHANGE (MAIN)) or 58(AUDITORIUM) or 59(OPERA HOUSE) or 60(PROCESSING PLANT) or 61(POWER PLANT) or 62(PUMP HOUSE) or 64(WEATHER STATION) or 65(DEPENDENTS HOUSING/BIVOUAC AREA) or 66(COMMUNICATIONS BUILDING)
and width < 0.8 mm (map scale)
and DFS(DISTANCE FROM SHORELINE) <= 2,000 m
OR BFC(BUILDING FUNCTION CATEGORY) 50(LIGHTHOUSE)
and EXS(EXISTENCE CATEGORY) 6(ABANDONED)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Miscellaneous Features (1L)
*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1L018 BUILDING SUPERSTRUCTURE ADDITION
POINT

Attributes		PG Rules
BFC	BUILDING FUNCTION CATEGORY	D-7011
COC	CONSPICUOUS OBJECT CATEGORY	L-4722
HWT	HOUSE OF WORSHIP TYPE	L-4884
RSU	ROOF SUPERSTRUCTURE CATEGORY	

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1L020 BUILT-UP AREA
AREA

Attributes		PG Rules
ARA	AREA COVERAGE ATTRIBUTE	R-2021
BAC	BUILT-UP AREA CLASSIFICATION	R-2474
LEN	LENGTH /DIAMETER	
WID	*WIDTH*	

Inclusion Conditions:

BAC(BUILT-UP AREA CLASSIFICATION) 1(SPARSE TO MODERATE) or 2(DENSE)
and area >= 6.25 mm square (map scale)

POINT

Attributes		PG Rules
ARA	AREA COVERAGE ATTRIBUTE	-None
BAC	BUILT-UP AREA CLASSIFICATION	
LEN	LENGTH /DIAMETER	

Inclusion Conditions:

BAC(BUILT-UP AREA CLASSIFICATION) 1(SPARSE TO MODERATE) or 2(DENSE)
and area < 6.25 mm square (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1L130 MONUMENT
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-3805
HGT	HEIGHT ABOVE SURFACE LEVEL	L-4709
NAM	NAME CATEGORY	L-4722
SSC	STRUCTURE SHAPE CATEGORY	L-4813
		L-4883
		O-3434
		R-2746
		T-0856

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Miscellaneous Features (1L)

1L130 MONUMENT (Cont.)
POINT

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and DFS(DISTANCE FROM SHORELINE) <= 3,000 m
and HGT(HEIGHT ABOVE SURFACE LEVEL) >= 10 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1L160 PIPELINE /PIPE
LINE

Attributes		PG Rules	PG Rules
DEP	DEPTH BELOW SURFACE LEVEL	L-4743	R-2744
DFS	DISTANCE FROM SHORELINE	L-4818	R-2755
EXS	EXISTENCE CATEGORY	L-4862	R-2818
HSB	HEIGHT ABOVE SEA BOTTOM	O-3427	R-2937
LEN	LENGTH /DIAMETER	R-2208	R-3669
LOC	LOCATION /ORIGIN CATEGORY	R-2222	R-3697
OWO	OVER WATER OBSTRUCTION		
PLT	PIPELINE TYPE		
PRO	PRODUCT CATEGORY		
SOC	SAFE OVERHEAD CLEARANCE		
VDC	VERTICAL DATUM CATEGORY		
VDR	VERTICAL DATUM RECORD		

Inclusion Conditions:

LOC(LOCATION/ORIGIN CATEGORY) 3(ON GROUND SURFACE)
and DFS(DISTANCE FROM SHORELINE) <= 100 m
OR LOC(LOCATION/ORIGIN CATEGORY) 4(SUSPENDED OR ELEVATED ABOVE GROUND OR WATER)
and OWO(OVER WATER OBSTRUCTION) 1(FEATURE CROSSES NAVIGABLE WATER) or 2(FEATURE CROSSES NON-NAVIGABLE WATER)
OR LOC(LOCATION/ORIGIN CATEGORY) 4(SUSPENDED OR ELEVATED ABOVE GROUND OR WATER)
and OWO(OVER WATER OBSTRUCTION) 3(NOT APPLICABLE)
and DFS(DISTANCE FROM SHORELINE) <= 100 m
OR LOC(LOCATION/ORIGIN CATEGORY) 11(ON SEA BOTTOM) or 12(SUSPENDED OR ELEVATED ABOVE SEA BOTTOM)
and PLT(PIPELINE TYPE) 1(TRANSPORT) or 3(INTAKE)
OR LOC(LOCATION/ORIGIN CATEGORY) or 11(ON SEA BOTTOM) or 12(SUSPENDED OR ELEVATED ABOVE SEA BOTTOM)
and PLT(PIPELINE TYPE) 2(OUTFALL)
and PRO(PRODUCT CATEGORY) 0(UNKNOWN) or 6(CHEMICAL) 19(OTHER) or 27(WATER) or 35(SEWAGE)
OR LOC(LOCATION/ORIGIN CATEGORY) 10(BELOW SEA BOTTOM)
and EXS(EXISTENCE CATEGORY) 28(OPERATIONAL)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1L220 STEEPLE
POINT

Attributes		PG Rules
BFC	BUILDING FUNCTION CATEGORY	D-7011
COC	CONSPICUOUS OBJECT CATEGORY	L-4722

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Miscellaneous Features (1L)

1L220 STEEPLE (Cont.)
POINT

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1L240 TOWER (NON- COMMUNICATION)
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-3805
HGT	HEIGHT ABOVE SURFACE LEVEL	L-4722
		O-3434
		R-2746
		T-0856

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(*NOT* CONSPICUOUS)
and DFS(DISTANCE FROM SHORELINE) <= 3,000 m
and HGT(HEIGHT ABOVE SURFACE LEVEL) >= 10 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1M030 GRAIN ELEVATOR
AREA

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-4722
HGT	HEIGHT ABOVE SURFACE LEVEL	O-3434
WID	WIDTH	T-0815
		T-0856

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and width >= 0.8 mm (map scale)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and width >= 0.8 mm (map scale)
and DFS(DISTANCE FROM SHORELINE) <= 3000 m
and HGT(HEIGHT ABOVE SURFACE LEVEL) >= 10 m

POINT

Attributes		PG Rules
AOO	ANGLE OF ORIENTATION	D-7011
COC	CONSPICUOUS OBJECT CATEGORY	L-4722
DFS	*DISTANCE FROM SHORELINE*	O-3434
HGT	HEIGHT ABOVE SURFACE LEVEL	T-0856
WID	WIDTH	

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Storage (1M)

1M030 GRAIN ELEVATOR (Cont.)
POINT

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and width < 0.8 mm (map scale)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and width < 0.8 mm (map scale)
and DFS(DISTANCE FROM SHORELINE) <= 3,000 m
and HGT(HEIGHT ABOVE SURFACE LEVEL) >= 10 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1M050 SILO
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-3805
HGT	HEIGHT ABOVE SURFACE LEVEL	L-4722
		O-3434
		T-0815
		T-0856

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and DFS(DISTANCE FROM SHORELINE) <= 3,000 m
and HGT(HEIGHT ABOVE SURFACE LEVEL) >= 10 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1M070 TANK
AREA

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-4722
HGT	HEIGHT ABOVE SURFACE LEVEL	L-4883
LEN	LENGTH /DIAMETER	O-3434
PRO	PRODUCT CATEGORY	T-0815
ZVL	Z VALUE	T-0818
		T-0856

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and length >= 1 mm (map scale)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and length >= 1 mm (map scale)
and DFS(DISTANCE FROM SHORELINE) <= 3,000 m
and HGT(HEIGHT ABOVE SURFACE LEVEL) >= 10 m

POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-4722
HGT	HEIGHT ABOVE SURFACE LEVEL	O-3434
LEN	LENGTH /DIAMETER	T-0815
ZVL	Z VALUE	T-0818
		T-0856

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Storage (1M)

1M070 TANK (Cont.)
POINT

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and length < 1 mm (map scale)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and length < 1 mm (map scale)
and DFS(DISTANCE FROM SHORELINE) <= 3,000 m
and HGT(HEIGHT ABOVE SURFACE LEVEL) >= 10 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1M080 WATER TOWER
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-3805
HGT	HEIGHT ABOVE SURFACE LEVEL	L-4722
		O-3434
		R-2746
		T-0815
		T-0856

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and DFS(DISTANCE FROM SHORELINE) <= 3,000 m
and HGT(HEIGHT ABOVE SURFACE LEVEL) >= 10 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1N010 RAILROAD TRACK
LINE

Attributes		PG Rules
DFS	DISTANCE FROM SHORELINE	D-1901
EXS	EXISTENCE CATEGORY	D-1902
RRC	RAILROAD /ROAD CATEGORIES	O-3430
		R-3697

Inclusion Conditions:

EXS(EXISTENCE CATEGORY) 6(ABANDONED) or 28(OPERATIONAL)
and RRC(RAILROAD/ROAD CATEGORIES) 0(UNKNOWN) or 1(MAIN LINE/BRANCH LINE) or 2(CAR-LINE) or 3(MONORAIL) or 8(LOGGING) or 14(RAILROAD IN ROAD)
and <= 6,000 m DFS(DISTANCE FROM SHORELINE)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1P030 ROAD
LINE

Attributes		PG Rules
DFS	DISTANCE FROM SHORELINE	D-1904
EXS	EXISTENCE CATEGORY	D-1905
LEN	LENGTH /DIAMETER	O-3436
MED	MEDIAN CATEGORY	R-2297
MWD	MEDIAN WIDTH	R-2298
		R-3697
		R-3699

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Transportation /Roads (1P)

1P030 ROAD (Cont.)
LINE

Inclusion Conditions:

EXS(EXISTENCE CATEGORY) 5(UNDER CONSTRUCTION) or 6 (ABANDONED) or 028(OPERATIONAL)
and DFS(DISTANCE FROM SHORELINE) <= 6,000 m
and length >= 2 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1Q010 AERIAL CABLEWAY LINE /SKI LIFT LINE
LINE

Attributes		PG Rules
OWO	OVER WATER OBSTRUCTION	D-7012
SOC	SAFE OVERHEAD CLEARANCE	L-4775
VDC	VERTICAL DATUM CATEGORY	L-4804
VDR	VERTICAL DATUM RECORD	L-4818
		R-2222
		R-2744
		R-2755
		R-2877

Inclusion Conditions:

OWO(OVER WATER OBSTRUCTION) 1(FEATURE CROSSES NAVIGABLE WATER)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1Q040 BRIDGE /OVERPASS /VIADUCT
LINE

Attributes		PG Rules	PG Rules
BDC	BRIDGE DESIGN CATEGORY	L-4814	R-2286
BOT	BRIDGE OPENING TYPE	L-4815	R-2744
DAT	DATE CATEGORY	L-4861	R-2755
EXS	EXISTENCE CATEGORY	L-4863	R-2804
LEN	LENGTH /DIAMETER	L-4890	R-9035
NAM	NAME CATEGORY	O-3437	
OWO	OVER WATER OBSTRUCTION		
TUC	TRANSPORTATION USE CATEGORY		

Inclusion Conditions:

OWO(OVER WATER OBSTRUCTION) 1(FEATURE CROSSES NAVIGABLE WATER)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1Q045 BRIDGE SPAN
LINE

Attributes		PG Rules
BSM	BRIDGE SPAN MOBILITY	L-4775
EXS	EXISTENCE CATEGORY	L-4804
SHC	SAFE HORIZONTAL CLEARANCE	L-4805
SOC	SAFE OVERHEAD CLEARANCE	L-4818
VDC	VERTICAL DATUM CATEGORY	R-2222
VDR	VERTICAL DATUM RECORD	R-3671

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Associated Transportation (1Q)

1Q045 BRIDGE SPAN (Cont.)
LINE

Inclusion Conditions:

EXS(EXISTENCE CATEGORY) 32(NAVIGABLE)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1Q060 CONTROL TOWER
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-4722
TUC	TRANSPORTATION USE CATEGORY	T-0815

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS OBJECT)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and TUC(TRANSPORTATION USE CATEGORY) 12(MARINE) or 13(AIR)
and DFS(DISTANCE FROM SHORELINE) <= 2,000 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1Q070 FERRY CROSSING
LINE

Attributes		PG Rules
FER	FERRY TYPE	L-4778
LEN	LENGTH /DIAMETER	R-2740
		R-2878

Inclusion Conditions:

FER(FERRY TYPE) 1(FERRY WITH CABLES)
OR FER(FERRY TYPE) 0(UNKNOWN) or 2(FERRY WITHOUT CABLES)
and LEN(LENGTH/DIAMETER) < 5,000 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1Q110 MOORING MAST
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-4722
		R-2746
		T-0815

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and DFS(DISTANCE FROM SHORELINE) <= 6,000 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Associated Transportation (1Q)
*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1Q131 TUNNEL
LINE

Attributes		PG Rules
LEN	LENGTH /DIAMETER	L-4709
NAM	NAME CATEGORY	L-4743
TUC	TRANSPORTATION USE CATEGORY	R-2842

Inclusion Conditions:

Length >= 3 mm length (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1R005 AIR OBSTRUCTION LIGHT
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
OLQ	OBSTRUCTION LIGHT QUALITY	R-3679

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1R030 NAVAIDS (AERONAUTICAL)
POINT

Attributes		PG Rules
DFS	DISTANCE FROM SHORELINE	L-4722
EXS	EXISTENCE CATEGORY	L-4782
NST	RADIO NAVIGATION /COMMUNICATION	
RGE	TRANSMITTER EFFECTIVE RANGE	

Inclusion Conditions:

NST(RADIO NAVIGATION/COMMUNICATIONS) 2(CONSOL) or 17(NON-DIRECTIONAL RADIOBEACON (NDB))
and RGE(TRANSMITTER EFFECTIVE RANGE) >= 50 nautical miles
and EXS(EXISTENCE CATEGORY) 33(CONTINUOUS OPERATION)
and DFS(DISTANCE FROM SHORELINE) <= 9,997 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1T005 CABLE
LINE

Attributes		PG Rules
EXS	EXISTENCE CATEGORY	R-2211
LOC	LOCATION /ORIGIN CATEGORY	R-2212
USE	USE STATUS	R-2818

Inclusion Conditions:

LOC(LOCATION/ORIGIN CATEGORY) 6(BELOW WATER SURFACE)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1T010 DISH
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-3805
HGT	HEIGHT ABOVE SURFACE LEVEL	L-4722
		L-4737

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Communication /Transmission (1T)

1T010 DISH (Cont.)
POINT

O-3434
T-0815
T-0856

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and DFS(DISTANCE FROM SHORELINE) <= 3,000 m
and HGT(HEIGHT ABOVE SURFACE LEVEL) >= 10 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1T030 POWER TRANSMISSION LINE
LINE

Attributes		PG Rules
OWO	OVER WATER OBSTRUCTION	D-7012
SOC	SAFE OVERHEAD CLEARANCE	L-4775
VDC	VERTICAL DATUM CATEGORY	L-4804
VDR	VERTICAL DATUM RECORD	L-4818
		R-2213
		R-2222
		R-2744
		R-2755
		R-2877

Inclusion Conditions:

OWO(OVER WATER OBSTRUCTION) 1(FEATURE CROSSES NAVIGABLE WATER)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1T045 RADAR TRANSMITTER/RADOME
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
SSC	STRUCTURE SHAPE CATEGORY	L-4722
		L-4864
		L-4883

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1T060 TELEPHONE LINE /TELEGRAPH LINE
LINE

Attributes		PG Rules
OWO	OVER WATER OBSTRUCTION	D-7012
SOC	SAFE OVERHEAD CLEARANCE	L-4775
VDC	VERTICAL DATUM CATEGORY	L-4804
VDR	VERTICAL DATUM RECORD	L-4818
		R-2222
		R-2744
		R-2755
		R-2877

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Communication /Transmission (1T)

1T060 TELEPHONE LINE /TELEGRAPH LINE (Cont.)
LINE

Inclusion Conditions:

OWO(OVER WATER OBSTRUCTION) 1(FEATURE CROSSES NAVIGABLE WATER)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1T080 TOWER (COMMUNICATION)
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	L-3805
GUG	GUYED OR UNGUYED CATEGORY	L-4722
HGT	HEIGHT ABOVE SURFACE LEVEL	L-4737
NST	RADIO NAVIGATION /COMMUNICATION	O-3431
		O-3434
		R-2746
		T-0824
		T-0857

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
OR NST(RADIO NAVIGATION/COMMUNICATION) 2(CONSOL) or 3(DECCA) or 7(LORAN) or 8(OMEGA)
OR COC(CONSPICUOUS OBJECT CATEGORY) 2(NOT CONSPICUOUS)
and DFS(DISTANCE FROM SHORELINE) <= 3,000 m
and HGT(HEIGHT ABOVE SURFACE LEVEL) >= 10 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

1U030 AIRCRAFT FACILITY
AREA

Attributes		PG Rules
ACC	ACCURACY CATEGORY	L-4704
AFT	AIRCRAFT FACILITY TYPE	L-4705
DFS	DISTANCE FROM SHORELINE	L-4722
EXS	EXISTENCE CATEGORY	L-4737
LEN	LENGTH /DIAMETER	L-4816
NAM	NAME CATEGORY	R-2800
WID	WIDTH	T-0813

Inclusion Conditions:

AFT(AIRCRAFT FACILITY TYPE) 1(AIRPORT) or 2(HELIPORT) or 3(SEAPLANE BASE)
and length >= 10 mm (map scale)
and EXS(EXISTENCE CATEGORY) 28(OPERATIONAL)
and DFS(DISTANCE FROM SHORELINE) <= 6,000 m

POINT

Attributes		PG Rules
AFT	AIRCRAFT FACILITY TYPE	L-4816
DFS	DISTANCE FROM SHORELINE	T-0813
EXS	EXISTENCE CATEGORY	
LEN	LENGTH /DIAMETER	

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Culture (1)
SUBCATEGORY: Airports (1U)

1U030 AIRCRAFT FACILITY (Cont.)
POINT

Inclusion Conditions:

APT(AIRCRAFT FACILITY TYPE) 1(AIRPORT)
and length < 10 mm (map scale)
and EXS(EXISTENCE CATEGORY) 28(OPERATIONAL)
and DFS(DISTANCE FROM SHORELINE) <= 6,000 m

*HAC 3

1U040 AIRCRAFT FACILITY BEACON
POINT

Attributes		PG Rules
COL	CHARACTER OF LIGHT	L-4722
DFS	DISTANCE FROM SHORELINE	R-2849

Inclusion Conditions:

DFS(DISTANCE FROM SHORELINE) <= 6,000 m

*HAC 3

1U160 RUNWAY
AREA

Attributes		PG Rules
DFS	DISTANCE FROM SHORELINE	O-3412
EXS	EXISTENCE CATEGORY	R-2880
LEN	LENGTH /DIAMETER	R-3697
WID	WIDTH	

Inclusion Conditions:

DFS(DISTANCE FROM SHORELINE) <= 6,000 m
and length >= 10 mm
and width >= 1 mm (map scale)
and EXS(EXISTENCE CATEGORY) 28(OPERATIONAL)

LINE

Attributes		PG Rules
DFS	DISTANCE FROM SHORELINE	R-2880
EXS	EXISTENCE CATEGORY	R-3697
LEN	LENGTH /DIAMETER	
WID	WIDTH	

Inclusion Conditions:

DFS(DISTANCE FROM SHORELINE) <= 6,000 m
and length >= 10 mm
and width < 1 mm (map scale)
and EXS(EXISTENCE CATEGORY) 28(OPERATIONAL)

*HAC 3

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Coastal Hydro (2A)
*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2A010 COASTAL SHORELINE
LINE

Attributes		PG Rules
ACC	ACCURACY CATEGORY	D-7010
SLT	SHORELINE TYPE CATEGORY	R-1200
VDC	VERTICAL DATUM CATEGORY	R-2423
		R-2737
		R-2738

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2A020 FORESHORE
AREA

Attributes		PG Rules
LEN	LENGTH /DIAMETER	L-4705
LOC	LOCATION /ORIGIN CATEGORY	L-4706
MCP	MATERIAL COMPOSITION PRIMARY	L-4722
MCS	MATERIAL COMPOSITION SECONDARY	R-2825
WID	WIDTH	R-2826
		R-3708

Inclusion Conditions:

LOC(LOCATION/ORIGIN CATEGORY) 8(AT SHORELINE)
and width >= 0.5 mm (map scale)
OR LOC(LOCATION/ORIGIN CATEGORY) 2(OFF-SHORE)
and length >= 3 mm (map scale)

POINT

Attributes		PG Rules
LEN	LENGTH /DIAMETER	L-4706
LOC	LOCATION /ORIGIN CATEGORY	L-4722
MCP	MATERIAL COMPOSITION PRIMARY	R-2825
MCS	MATERIAL COMPOSITION SECONDARY	R-2911
		R-3708
		R-3709

Inclusion Conditions:

LOC(LOCATION/ORIGIN CATEGORY) 2(OFF-SHORE)
and length < 3 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2A040 OPEN WATER (EXCEPT INLAND)
AREA

Attributes	PG Rules
NO ATTRIBUTE REQUIRED	O-3407
	O-3435
	R-2869
	R-2871

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Coastal Hydro (2A)

2A040 OPEN WATER (EXCEPT INLAND) (Cont.)
AREA

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2B010 ANCHORAGE
AREA

Attributes		PG Rules
ANC	ANCHORAGE TYPE CATEGORY	L-4705
COD	CERTAINTY OF DELINEATION	L-4715
LEN	LENGTH /DIAMETER	L-4722
NAM	NAME CATEGORY	L-4753
TIM	TIME ATTRIBUTE	L-4813
WID	*WIDTH*	L-4869
		L-4882
		R-2800
		R-2811

Inclusion Conditions:

COD(CERTAINTY OF DELINEATION) = 1(LIMITS AND INFO KNOWN)
and length >= 8 mm (map scale)

POINT

Attributes		PG Rules
ANC	ANCHORAGE TYPE CATEGORY	L-4869
COD	CERTAINTY OF DELINEATION	R-2811
LEN	LENGTH /DIAMETER	
NAM	NAME CATEGORY	
TIM	TIME ATTRIBUTE	

Inclusion Conditions:

COD(CERTAINTY OF DELINEATION) = 1(LIMITS AND INFO KNOWN)
and length < 8 mm (map scale)
OR COD(CERTAINTY OF DELINEATION) = 2(LIMITS AND INFO UNKNOWN)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2B040 BREAKWATER
AREA

Attributes		PG Rules
LEN	LENGTH /DIAMETER	L-4725
VRC	VERTICAL REFERENCE CATEGORY	R-2741
WID	WIDTH	R-2802
		R-2803
		R-3672
		R-3708

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Ports and Harbors (2B)

2B040 BREAKWATER (Cont.)
AREA

Inclusion Conditions:

Width >= 0.8 mm
and length >= 0.8 mm (map scale)

LINE

Attributes		PG Rules
LEN	LENGTH /DIAMETER	L-4725
VRC	VERTICAL REFERENCE CATEGORY	L-4743
WID	WIDTH	R-2741

Inclusion Conditions:

length >= 0.8 mm
and width < 0.8 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2B050 CALLING-IN POINT
POINT

Attributes		PG Rules
DF1	DIRECTION OF TRAFFIC - 1	D-1907
DF2	DIRECTION OF TRAFFIC - 2	L-4709
DF3	DIRECTION OF TRAFFIC - 3	L-4724
DF4	DIRECTION OF TRAFFIC - 4	L-4870
NAM	NAME CATEGORY	

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2B105 FISHING HARBOR
POINT

Attributes	PG Rules
NO ATTRIBUTE REQUIRED	-None

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2B140 JETTY
LINE

Attributes		PG Rules
LEN	LENGTH /DIAMETER	-None
VRC	VERTICAL REFERENCE CATEGORY	
WID	WIDTH	

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Ports and Harbors (2B)

2B140 JETTY (Cont.)
LINE

Inclusion Conditions:

Length >= 3 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2B170 OFFSHORE LOADING FACILITY
AREA

Attributes		PG Rules
LEN	LENGTH /DIAMETER	L-4705
NAM	NAME CATEGORY	L-4709
WID	WIDTH	L-4722
		R-9035

Inclusion Conditions:

Width >= 0.8 mm (map scale)

LINE

Attributes		PG Rules
LEN	LENGTH /DIAMETER	L-4709
NAM	NAME CATEGORY	L-4860
WID	WIDTH	R-9035

Inclusion Conditions:

Width < 0.8 mm
and length >= 0.8 mm (map scale)

POINT

Attributes		PG Rules
CHA	LIGHT CHARACTERISTIC CATEGORY	L-4709
LEN	LENGTH /DIAMETER	L-4722
NAM	NAME CATEGORY	R-2849
USE	USE STATUS	
WID	WIDTH	

Inclusion Conditions:

Length < 0.8 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2B180 OYSTER OR CULTIVATED SHELLFISH BED
AREA

Attributes		PG Rules
LEN	LENGTH /DIAMETER	L-4705
WID	WIDTH	L-4722

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Ports and Harbors (2B)

2B180 OYSTER OR CULTIVATED SHELLFISH BED (Cont.)
AREA

Inclusion Conditions:

Length >= 20 mm (map scale)

POINT

Attributes		PG Rules
LEN	LENGTH /DIAMETER	-None

Inclusion Conditions:

Length < 20 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2B190 PIER, WHARF
AREA

Attributes		PG Rules
LEN	LENGTH /DIAMETER	R-2804
PUC	PIER USE CATEGORY	R-9035
WID	WIDTH	

Inclusion Conditions:

Width >= 0.8 mm (map scale)
and PUC(PIER USE CATEGORY) 0(UNKNOWN) or 1(BERTHING OF VESSELS)

LINE

Attributes		PG Rules
LEN	LENGTH /DIAMETER	-None
PUC	PIER USE CATEGORY	
WID	WIDTH	

Inclusion Conditions:

Width < 0.8 mm (map scale)
and PUC(PIER USE CATEGORY) 0(UNKNOWN) or 1(BERTHING OF VESSELS)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2B230 SEAWALL
LINE

Attributes		PG Rules
LEN	LENGTH /DIAMETER	-None
PHT	PREDOMINANT HEIGHT	

Inclusion Conditions:

Length >= 4 mm (map scale)
and PHT(PREDOMINANT HEIGHT) >= 2 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Navaids (2C)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2C010 BUOY
POINT

Attributes		PG Rules	PG Rules	PG Rules
BF1	BROADCAST FREQUENCY (1)	D-1914	L-4842	R-2722
BF2	BROADCAST FREQUENCY (2)	D-7013	L-4843	R-2723
CCF	COLOR CODE OF FEATURE	L-4709	L-4844	R-2724
CHA	LIGHT CHARACTERISTIC CATEGORY	L-4711	L-4845	R-2725
COL	CHARACTER OF LIGHT	L-4737	L-4846	R-2726
EOL	ELEVATION OF LIGHT	L-4759	L-4849	R-2727
LVR	LIGHT VISIBILITY RANGE	L-4761	L-4850	R-2832
MLR	*MULTIPLE LIGHT RANGES*	L-4766	L-4853	R-2849
NAM	NAME CATEGORY	L-4767	L-4856	R-2884
PER	PERIOD OF LIGHT	L-4768	L-4857	R-2885
RA1	RADIO AID (1)	L-4789	L-4858	R-2886
RA2	RADIO AID (2)	L-4790	L-4868	R-2887
REF	RADAR REFLECTOR ATTRIBUTE	L-4831	L-4875	R-2992
SSC	STRUCTURE SHAPE CATEGORY	L-4833	L-4876	R-2994
SST	SOUND SIGNAL TYPE	L-4834	L-4899	R-2995
TMC	TOPMARK CATEGORY	L-4835	R-2295	R-2996
		L-4836	R-2717	R-2997
		L-4837	R-2718	R-3684
		L-4838	R-2719	S-1403
		L-4839	R-2720	T-0845
		L-4840	R-2721	T-0846
		L-4841		

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2C020 CLEARING LINE
LINE

Attributes		PG Rules
BRG	BEARING OF OBJECT	D-7012
COL	CHARACTER OF LIGHT	L-4743
DRP	DESCRIPTION OF REFERENCE POINT	L-4830
LAF	LINE ASSOCIATED FEATURES	L-4881
		L-7010
		O-3420
		R-2999

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2C030 ELECTRONIC BEACON
POINT

Attributes		PG Rules	PG Rules
BF1	BROADCAST FREQUENCY (1)	D-7013	L-4850
BF2	BROADCAST FREQUENCY (2)	L-4709	L-4853
BR1	BEACON RANGE (1)	L-4737	L-4899
BR2	BEACON RANGE (2)	L-4783	O-3400
NAM	NAME CATEGORY	L-4835	T-0854
RA1	RADIO AID (1)	L-4836	T-0855
RA2	RADIO AID (2)	L-4844	

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Navaids (2C)

2C030 ELECTRONIC BEACON (Cont.)
POINT

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2C040 LEADING LINE
LINE

Attributes		PG Rules
BRG	BEARING OF OBJECT	D-7012
COL	CHARACTER OF LIGHT	L-4743
DRP	DESCRIPTION OF REFERENCE POINT	L-4855
LAF	LINE ASSOCIATED FEATURES	L-4881
		L-7010
		O-3420
		R-2728
		R-2998
		R-3681

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2C050 LIGHT
POINT

Attributes		PG Rules	PG Rules	PG Rules
BF1	BROADCAST FREQUENCY (1)	D-7013	L-4839	L-4876
BF2	BROADCAST FREQUENCY (2)	L-4709	L-4840	L-4888
CCF	COLOR CODE OF FEATURE	L-4711	L-4841	L-4899
COL	CHARACTER OF LIGHT	L-4737	L-4842	O-3400
EOL	ELEVATION OF LIGHT	L-4759	L-4843	O-3415
EXS	EXISTENCE CATEGORY	L-4760	L-4844	R-2295
HLT	HYDROGRAPHIC LIGHT TYPE	L-4761	L-4847	R-2716
L51	SECTOR LABEL (1)	L-4762	L-4848	R-2729
L52	SECTOR LABEL (2)	L-4783	L-4849	R-2759
L53	SECTOR LABEL (3)	L-4788	L-4850	R-2832
L54	SECTOR LABEL (4)	L-4790	L-4851	R-2849
L55	SECTOR LABEL (5)	L-4792	L-4852	R-2884
L56	SECTOR LABEL (6)	L-4793	L-4853	R-2887
L57	SECTOR LABEL (7)	L-4831	L-4856	R-2889
L58	SECTOR LABEL (8)	L-4833	L-4857	R-2920
L59	SECTOR LABEL (9)	L-4834	L-4858	R-2992
L60	SECTOR LABEL (10)	L-4835	L-4865	R-3683
L61	SECTOR LABEL (11)	L-4836	L-4867	S-1402
L62	SECTOR LABEL (12)	L-4837	L-4868	T-0820
L63	SECTOR LABEL (13)	L-4838	L-4875	T-0853
L64	SECTOR LABEL (14)			
L65	SECTOR LABEL (15)			
L66	SECTOR LABEL (16)			
L67	SECTOR LABEL (17)			
L68	SECTOR LABEL (18)			
L69	SECTOR LABEL (19)			
L70	SECTOR LABEL (20)			
L71	SECTOR LABEL (21)			
L72	SECTOR LABEL (22)			
L73	SECTOR LABEL (23)			
L74	SECTOR LABEL (24)			

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Navaids (2C)

2C050 LIGHT (Cont.)
POINT

Attributes		PG Rules	PG Rules	PG Rules
L75	SECTOR LABEL (25)			
LVR	LIGHT VISIBILITY RANGE			
MLR	MULTIPLE LIGHT RANGES			
NAM	NAME CATEGORY			
PER	PERIOD OF LIGHT			
RA1	RADIO AID (1)			
RA2	RADIO AID (2)			
REF	RADAR REFLECTOR ATTRIBUTE			
S51	SECTOR ANGLE (1)			
S52	SECTOR ANGLE (2)			
S53	SECTOR ANGLE (3)			
S54	SECTOR ANGLE (4)			
S55	SECTOR ANGLE (5)			
S56	SECTOR ANGLE (6)			
S57	SECTOR ANGLE (7)			
S58	SECTOR ANGLE (8)			
S59	SECTOR ANGLE (9)			
S60	SECTOR ANGLE (10)			
S61	SECTOR ANGLE (11)			
S62	SECTOR ANGLE (12)			
S63	SECTOR ANGLE (13)			
S64	SECTOR ANGLE (14)			
S65	SECTOR ANGLE (15)			
S66	SECTOR ANGLE (16)			
S67	SECTOR ANGLE (17)			
S68	SECTOR ANGLE (18)			
S69	SECTOR ANGLE (19)			
S70	SECTOR ANGLE (20)			
S71	SECTOR ANGLE (21)			
S72	SECTOR ANGLE (22)			
S73	SECTOR ANGLE (23)			
S74	SECTOR ANGLE (24)			
S75	SECTOR ANGLE (25)			
SSC	STRUCTURE SHAPE CATEGORY			
SST	SOUND SIGNAL TYPE			
TMC	TOPMARK CATEGORY			

Inclusion Conditions:

HLT(HYDROGRAPHIC LIGHT TYPE) 0(UNKNOWN) or 1(SECTORED LIGHT) or 2(OTHER) or 6(LIGHTED BEACON)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2C060 VISUAL BEACON
POINT

Attributes		PG Rules	PG Rules	PG Rules
BF1	BROADCAST FREQUENCY (1)	D-7013	L-4835	L-4849
BF2	BROADCAST FREQUENCY (2)	L-4709	L-4836	L-4850
CCF	COLOR CODE OF FEATURE	L-4737	L-4837	L-4853
NAM	NAME CATEGORY	L-4783	L-4838	L-4868
RA1	RADIO AID (1)	L-4790	L-4839	R-2295
RA2	RADIO AID (2)	L-4793	L-4840	R-2759
REF	RADAR REFLECTOR ATTRIBUTE	L-4831	L-4841	R-2992
SSC	STRUCTURE SHAPE CATEGORY	L-4833	L-4843	S-1403
SST	SOUND SIGNAL TYPE	L-4834	L-4844	
TMC	TOPMARK CATEGORY			

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Navaids (2C)

2C060 VISUAL BEACON (Cont.)
POINT

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2D000 MISCELLANEOUS UNDERWATER FEATURE
AREA

Attributes		PG Rules	PG Rules
ACC	ACCURACY CATEGORY	L-4700	O-3411
DAT	DATE CATEGORY	L-4702	R-2221
DDA	DESCRIPTION OF DANGER	L-4707	R-2222
EXS	EXISTENCE CATEGORY	L-4708	R-2800
HDI	HYDROGRAPHIC DEPTH /HEIGHT INFORMATION	L-4722	R-2806
HDP	HYDROGRAPHIC DEPTH	L-4729	R-2916
LEN	LENGTH /DIAMETER	L-4730	R-3704
SFC	SEA FLOOR FEATURE CATEGORY	L-4807	R-3708
VDC	VERTICAL DATUM CATEGORY	L-4808	
VDR	VERTICAL DATUM RECORD		
WID	WIDTH		

Inclusion Conditions:

SFC(SEA FLOOR FEATURE CATEGORY) 1(UNKNOWN (OBSTRUCTION)) or 2(OTHER) or 3(FISH HAVEN)
and length >= 4 mm (map scale)

POINT

Attributes		PG Rules	PG Rules
ACC	ACCURACY CATEGORY	D-1909	L-4891
DAT	DATE CATEGORY	L-4700	O-3411
DDA	DESCRIPTION OF DANGER	L-4702	R-2221
EXS	EXISTENCE CATEGORY	L-4707	R-2222
HDI	HYDROGRAPHIC DEPTH /HEIGHT INFORMATION	L-4708	R-2806
HDP	HYDROGRAPHIC DEPTH	L-4722	R-2916
LEN	LENGTH /DIAMETER	L-4729	R-3704
SFC	SEA FLOOR FEATURE CATEGORY	L-4730	R-3708
VDC	VERTICAL DATUM CATEGORY	L-4808	R-3709
VDR	VERTICAL DATUM RECORD	L-4872	S-1401
WID	WIDTH		

Inclusion Conditions:

SFC(SEA FLOOR FEATURE CATEGORY) 1(UNKNOWN (OBSTRUCTION)) or 2(OTHER) or 3(FISH HAVEN)
and length < 4 mm (map scale)
OR SFC(SEA FLOOR FEATURE CATEGORY) 4(WELL) or 5(SUBMERGED PRODUCTION PLATFORM)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2D010 BREAKERS
AREA

Attributes		PG Rules
LEN	LENGTH /DIAMETER	L-4705
LOC	LOCATION /ORIGIN CATEGORY	L-4722
		R-2800
		R-2911

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Dangers and Underwater Features (2D)

2D010 BREAKERS (Cont.)
AREA

Inclusion Conditions:

LOC(LOCATION/ORIGIN CATEGORY) 8(AT SHORELINE)
and length >= 5 mm (map scale)

POINT

Attributes		PG Rules
ACC	ACCURACY CATEGORY	L-4700
DAT	DATE CATEGORY	L-4706
EXS	EXISTENCE CATEGORY	L-4707
LEN	LENGTH /DIAMETER	L-4708
LOC	LOCATION /ORIGIN CATEGORY	L-4722
		L-4730
		L-4808
		O-3411
		S-1404

Inclusion Conditions:

LOC(LOCATION/ORIGIN CATEGORY) 2(OFF-SHORE)
OR LOC(LOCATION/ORIGIN CATEGORY) 8(AT SHORELINE)
and length < 5 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2D020 CRIB
AREA

Attributes		PG Rules	PG Rules
ACC	ACCURACY CATEGORY	L-4700	L-4809
DAT	DATE CATEGORY	L-4702	O-3411
EXS	EXISTENCE CATEGORY	L-4707	R-2221
HDI	HYDROGRAPHIC DEPTH /HEIGHT INFORMATION	L-4708	R-2222
HDP	HYDROGRAPHIC DEPTH	L-4722	R-2802
LEN	LENGTH /DIAMETER	L-4729	R-2911
VDC	VERTICAL DATUM CATEGORY	L-4807	R-3672
VDR	VERTICAL DATUM RECORD	L-4808	R-3708
VRC	VERTICAL REFERENCE CATEGORY		
WID	WIDTH		

Inclusion Conditions:

Length >= 1 mm (map scale)

POINT

Attributes		PG Rules	PG Rules
ACC	ACCURACY CATEGORY	L-4700	L-4809
AOO	ANGLE OF ORIENTATION	L-4702	O-3411
DAT	DATE CATEGORY	L-4707	R-2221
EXS	EXISTENCE CATEGORY	L-4708	R-2222
HDI	HYDROGRAPHIC DEPTH /HEIGHT INFORMATION	L-4722	R-2911
HDP	HYDROGRAPHIC DEPTH	L-4729	R-3672
LEN	LENGTH /DIAMETER	L-4808	R-3708
VDC	VERTICAL DATUM CATEGORY		
VDR	VERTICAL DATUM RECORD		
VRC	VERTICAL REFERENCE CATEGORY		
WID	WIDTH		

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Dangers and Underwater Features (2D)

2D020 CRIB (Cont.)
POINT

Inclusion Conditions:

Length < 1 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2D030 DISCOLORED WATER
AREA

Attributes		PG Rules
ACC	ACCURACY CATEGORY	L-4700
DAT	DATE CATEGORY	L-4707
EXS	EXISTENCE CATEGORY	L-4708
LEN	LENGTH /DIAMETER	L-4722
		L-4730
		L-4808
		O-3411
		R-2287
		R-2911
		R-3708

Inclusion Conditions:

Length >= 4 mm (map scale)

POINT

Attributes		PG Rules	PG Rules
ACC	ACCURACY CATEGORY	L-4700	L-4809
DAT	DATE CATEGORY	L-4707	O-3411
EXS	EXISTENCE CATEGORY	L-4708	R-2287
LEN	LENGTH /DIAMETER	L-4722	R-2911
		L-4730	R-3708
		L-4808	

Inclusion Conditions:

Length < 4 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2D040 EDDIES
AREA

Attributes		PG Rules
ARA	AREA COVERAGE ATTRIBUTE	D-1907
WID	WIDTH	R-2913

Inclusion Conditions:

Width >= 5 mm (map scale)

POINT

Attributes		PG Rules
WID	WIDTH	D-1907

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Dangers and Underwater Features (2D)

2D040 EDDIES (Cont.)
POINT

Inclusion Conditions:

Width < 5 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2D050 FOUL GROUND
AREA

Attributes		PG Rules	PG Rules
ACC	ACCURACY CATEGORY	L-4700	L-4807
DAT	DATE CATEGORY	L-4702	L-4808
EXS	EXISTENCE CATEGORY	L-4707	O-3411
HDI	HYDROGRAPHIC DEPTH /HEIGHT INFORMATION	L-4708	R-2221
HDP	HYDROGRAPHIC DEPTH	L-4722	R-2222
LEN	LENGTH /DIAMETER	L-4729	R-2800
VDC	VERTICAL DATUM CATEGORY	L-4730	R-2806
VDR	VERTICAL DATUM RECORD		

Inclusion Conditions:

Length >= 4 mm (map scale)

POINT

Attributes		PG Rules	PG Rules
ACC	ACCURACY CATEGORY	D-1909	L-4808
DAT	DATE CATEGORY	L-4700	L-4872
EXS	EXISTENCE CATEGORY	L-4702	L-4891
HDI	HYDROGRAPHIC DEPTH /HEIGHT INFORMATION	L-4707	O-3411
HDP	HYDROGRAPHIC DEPTH	L-4708	R-2221
LEN	LENGTH /DIAMETER	L-4722	R-2222
VDC	VERTICAL DATUM CATEGORY	L-4729	R-2806
VDR	VERTICAL DATUM RECORD	L-4730	R-3709
WID	WIDTH		

Inclusion Conditions:

Length < 4 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2D060 KELP
AREA

Attributes		PG Rules
ARA	AREA COVERAGE ATTRIBUTE	D-1907
LEN	LENGTH /DIAMETER	R-2913

Inclusion Conditions:

Length >= 5 mm (map scale)

POINT

Attributes		PG Rules
LEN	LENGTH /DIAMETER	D-1907

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Dangers and Underwater Features (2D)

2D060 KELP (Cont.)
POINT

Inclusion Conditions:

Length < 5 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2D080 OVERFALLS /TIDE RIPS
AREA

Attributes		PG Rules
ARA	AREA COVERAGE ATTRIBUTE	D-1907
NAM	NAME CATEGORY	L-4709
WID	WIDTH	L-4737
		R-2913

Inclusion Conditions:

Width >= 5 mm (map scale)

POINT

Attributes		PG Rules
WID	WIDTH	D-1907

Inclusion Conditions:

Width < 5 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2D100 PILING
AREA

Attributes		PG Rules	PG Rules
ACC	ACCURACY CATEGORY	L-4700	L-4808
DAT	DATE CATEGORY	L-4707	O-3411
EXS	EXISTENCE CATEGORY	L-4708	R-2800
LEN	LENGTH /DIAMETER	L-4722	R-2914
VRC	VERTICAL REFERENCE CATEGORY	L-4730	R-3708
		L-4807	

Inclusion Conditions:

Length >= 3 mm (map scale)

POINT

Attributes		PG Rules
ACC	ACCURACY CATEGORY	L-4700
DAT	DATE CATEGORY	L-4707
EXS	EXISTENCE CATEGORY	L-4708
LEN	LENGTH /DIAMETER	L-4722
VRC	VERTICAL REFERENCE CATEGORY	L-4730
		L-4808
		L-4809
		O-3411
		R-2914

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Dangers and Underwater Features (2D)

2D100 PILING (Cont.)
POINT

Inclusion Conditions:

Length < 3 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2D110 PLATFORM
POINT

Attributes		PG Rules
CHA	LIGHT CHARACTERISTIC CATEGORY	L-4706
NAM	NAME CATEGORY	L-4722
NST	RADIO NAVIGATION /COMMUNICATION	L-4730
SST	SOUND SIGNAL TYPE	L-4839
		T-0800

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2D120 REEF
AREA

Attributes		PG Rules	PG Rules	PG Rules
ACC	ACCURACY CATEGORY	D-1910	L-4807	R-2221
COD	CERTAINTY OF DELINEATION	L-4700	L-4808	R-2222
DAT	DATE CATEGORY	L-4702	L-4809	R-2802
EXS	EXISTENCE CATEGORY	L-4707	L-4811	R-2806
HDH	HYDROGRAPHIC DRYING HEIGHT	L-4708	L-4813	R-2915
HDI	HYDROGRAPHIC DEPTH /HEIGHT INFORMATION	L-4709	O-3411	R-3708
HDP	HYDROGRAPHIC DEPTH	L-4722	R-2210	R-9040
MCP	MATERIAL COMPOSITION PRIMARY	L-4730	R-2215	
NAM	NAME CATEGORY			
VDC	VERTICAL DATUM CATEGORY			
VDR	VERTICAL DATUM RECORD			
VRC	VERTICAL REFERENCE CATEGORY			

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2D130 ROCK
POINT

Attributes		PG Rules	PG Rules	PG Rules
ACC	ACCURACY CATEGORY	D-1909	L-4763	R-2294
DAT	DATE CATEGORY	L-4700	L-4808	R-2806
EXS	EXISTENCE CATEGORY	L-4702	L-4872	R-2916
HDH	HYDROGRAPHIC DRYING HEIGHT	L-4707	O-3411	R-3707
HDI	HYDROGRAPHIC DEPTH /HEIGHT INFORMATION	L-4708	R-2210	R-3708
HDP	HYDROGRAPHIC DEPTH	L-4709	R-2221	R-3709
MCP	MATERIAL COMPOSITION PRIMARY	L-4722	R-2222	T-0836
NAM	NAME CATEGORY	L-4730		
SOH	SEVERITY OF HAZARD			
VDC	VERTICAL DATUM CATEGORY			
VDR	VERTICAL DATUM RECORD			
VRC	VERTICAL REFERENCE CATEGORY			

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Dangers and Underwater Features (2D)

2D130 ROCK (Cont.)
POINT

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2D140 SNAG /STUMP
AREA

Attributes		PG Rules	PG Rules
ACC	ACCURACY CATEGORY	L-4700	L-4808
DAT	DATE CATEGORY	L-4707	L-4809
EXS	EXISTENCE CATEGORY	L-4708	O-3411
LEN	LENGTH /DIAMETER	L-4722	R-2800
VRC	VERTICAL REFERENCE CATEGORY	L-4729	R-2914
		L-4730	R-3708
		L-4807	

Inclusion Conditions:

Length >= 3 mm (map scale)

POINT

Attributes		PG Rules	PG Rules
ACC	ACCURACY CATEGORY	L-4700	L-4872
DAT	DATE CATEGORY	L-4702	L-4891
EXS	EXISTENCE CATEGORY	L-4707	O-3411
HDI	HYDROGRAPHIC DEPTH /HEIGHT INFORMATION	L-4708	R-2221
HDP	HYDROGRAPHIC DEPTH	L-4722	R-2222
LEN	LENGTH /DIAMETER	L-4730	R-2914
VDC	VERTICAL DATUM CATEGORY	L-4808	R-3708
VDR	VERTICAL DATUM RECORD	L-4809	R-3709
VRC	VERTICAL REFERENCE CATEGORY		

Inclusion Conditions:

Length < 3 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2D180 WRECK
POINT

Attributes		PG Rules	PG Rules	PG Rules
ACC	ACCURACY CATEGORY	D-1900	L-4730	R-2806
AOO	ANGLE OF ORIENTATION	D-1909	L-4808	R-2916
DAT	DATE CATEGORY	L-4700	L-4809	R-3708
EPA	EXPOSED PORTION ATTRIBUTE	L-4702	L-4872	R-3709
EXS	EXISTENCE CATEGORY	L-4707	L-4891	S-1400
HDI	HYDROGRAPHIC DEPTH /HEIGHT INFORMATION	L-4708	O-3411	T-0801
HDP	HYDROGRAPHIC DEPTH	L-4722	R-2221	T-0810
LEN	LENGTH /DIAMETER	L-4729	R-2222	
SOH	SEVERITY OF HAZARD			
VDC	VERTICAL DATUM CATEGORY			
VDR	VERTICAL DATUM RECORD			
VRC	VERTICAL REFERENCE CATEGORY			

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Dangers and Underwater Features (2D)

2D180 WRECK (Cont.)
POINT

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2E010 DEPTH CURVE
LINE

Attributes		PG Rules	PG Rules
ACC	ACCURACY CATEGORY	L-4733	R-2814
CRV	DEPTH CURVE OR CONTOUR VALUE	L-4734	R-2827
UNI	UNITS CATEGORY	L-4776	R-2828
		O-3407	R-2869
		O-3408	R-2871
		O-3421	R-2874
		O-3435	R-2875
		R-2201	R-2876
		R-2812	R-2882
		R-2813	

Inclusion Conditions:

Depth curve interval: 2, 5, 10, 15, 20, 30, 50, 100, and 200 meters, or as shown on hydrographic source charts

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2E020 SOUNDING
POINT

Attributes		PG Rules	PG Rules	PG Rules
ACC	ACCURACY CATEGORY	D-1903	R-2224	R-9021
DAT	DATE CATEGORY	D-1912	R-2807	R-9022
EXS	EXISTENCE CATEGORY	D-1913	R-2860	R-9023
HDH	HYDROGRAPHIC DRYING HEIGHT	L-4700	R-2864	R-9024
HDP	HYDROGRAPHIC DEPTH	L-4702	R-2865	R-9025
SND	SOUNDING CATEGORY	L-4707	R-2867	R-9026
SVC	SOUNDING VELOCITY	L-4708	R-2908	R-9027
VDC	VERTICAL DATUM CATEGORY	L-4710	R-9011	R-9028
VDR	VERTICAL DATUM RECORD	L-4711	R-9012	R-9029
		O-3403	R-9013	R-9030
		O-3405	R-9014	R-9031
		O-3406	R-9015	R-9032
		O-3411	R-9016	R-9033
		O-3438	R-9018	R-9036
		R-2207	R-9019	T-0822
		R-2222	R-9020	T-0823

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Bottom Features (2F)
*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2F010 BOTTOM CHARACTERISTICS
POINT

Attributes		PG Rules	PG Rules
CSM	SECONDARY MATERIAL CHARACTERISTICS	L-4701	R-2285
MCC	MATERIAL COMPOSITION CHARACTERISTICS	L-4706	R-2815
MCP	MATERIAL COMPOSITION PRIMARY	L-4784	R-2883
MCS	MATERIAL COMPOSITION SECONDARY	R-2282	R-2890
MCU	MATERIAL COMPOSITION UNDERLYING	R-2283	R-2892
TXT	TEXT ATTRIBUTE	R-2284	
UMC	UNDERLYING MATERIAL CHARACTERISTICS		

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2G010 CURRENT ARROW /FLOW ARROW
POINT

Attributes		PG Rules
CRN	CURRENT RATE MINIMUM	L-4709
CRX	CURRENT RATE MAXIMUM	L-4794
CUR	CURRENT TYPE CATEGORY	R-2891
DOF	DIRECTION OF FLOW	T-0828
EXS	EXISTENCE CATEGORY	
HS1	CURRENT INFORMATION (1)	
HS2	CURRENT INFORMATION (2)	
NAM	NAME CATEGORY	

Inclusion Conditions:

CUR(CURRENT TYPE CATEGORY) 1(EBB) or 2(FLOOD) or 3(GENERAL) or 5(OCEAN)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2G030 TIDAL STREAM DATA POINT
POINT

Attributes		PG Rules
NAM	NAME CATEGORY	R-2906

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2G040 CURRENT DIAGRAM
POINT

Attributes		PG Rules
C80	RATE OF CURRENT	L-4806
C81	RATE OF CURRENT (1)	R-2808
C82	RATE OF CURRENT (2)	
C83	RATE OF CURRENT (3)	
C84	RATE OF CURRENT (4)	
C85	RATE OF CURRENT (5)	
C86	RATE OF CURRENT (6)	
C87	RATE OF CURRENT (7)	
C88	RATE OF CURRENT (8)	
C89	RATE OF CURRENT (9)	
C90	RATE OF CURRENT (10)	
C91	RATE OF CURRENT (11)	
D80	DIRECTION OF CURRENT	

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: *Hydrography* (2)
SUBCATEGORY: Tide and Current Information (2G)

2G040 CURRENT DIAGRAM (Cont.)
POINT

Attributes		PG Rules
D81	DIRECTION OF CURRENT (1)	
D82	DIRECTION OF CURRENT (2)	
D83	DIRECTION OF CURRENT (3)	
D84	DIRECTION OF CURRENT (4)	
D85	DIRECTION OF CURRENT (5)	
D86	DIRECTION OF CURRENT (6)	
D87	DIRECTION OF CURRENT (7)	
D88	DIRECTION OF CURRENT (8)	
D89	DIRECTION OF CURRENT (9)	
D90	DIRECTION OF CURRENT (10)	
D91	DIRECTION OF CURRENT (11)	

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2H010 AQUEDUCT
LINE

Attributes		PG Rules
LOC	LOCATION /ORIGIN CATEGORY	L-4775
OWO	OVER WATER OBSTRUCTION	L-4803
SOC	SAFE OVERHEAD CLEARANCE	L-4804
VDC	VERTICAL DATUM CATEGORY	L-4818
VDR	VERTICAL DATUM RECORD	R-2222
		R-2744
		R-2755

Inclusion Conditions:

OWO(OVER WATER OBSTRUCTION) 1(FEATURE CROSSES NAVIGABLE WATER)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2H020 CANAL
AREA

Attributes		PG Rules	PG Rules
ACC	ACCURACY CATEGORY	L-4702	R-2745
EXS	EXISTENCE CATEGORY	L-4709	R-2747
HDP	HYDROGRAPHIC DEPTH	L-4747	R-2986
HYC	HYDROGRAPHIC CATEGORY	L-4770	R-3673
NAM	NAME CATEGORY	L-4813	S-1500
RPA	REQUIRED FOR PORT ACCESS	L-4885	
SLT	SHORELINE TYPE CATEGORY		
WID	WIDTH		

Inclusion Conditions:

EXS(EXISTENCE CATEGORY) 32(NAVIGABLE)
and width >= 1 mm (map scale)
OR EXS(EXISTENCE CATEGORY) 6(ABANDONED)
and width >= 1 mm (map scale)
and HYC(HYDROGRAPHIC CATEGORY) 8(PERENNEAL/PERMANENT)

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Inland Water (2H)

2H020 CANAL (Cont.)
LINE

Attributes		PG Rules
EXS	EXISTENCE CATEGORY	L-4702
HDP	HYDROGRAPHIC DEPTH	L-4885
RPA	REQUIRED FOR PORT ACCESS	R-2745
WID	WIDTH	

Inclusion Conditions:

EXS(EXISTENCE CATEGORY) 32(NAVIGABLE)
and width < 1 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2H075 INLAND SHORELINE
LINE

Attributes		PG Rules
ACC	ACCURACY CATEGORY	D-7010
AHC	ASSOCIATED HYDROGRAPHIC CATEGORY	R-2739
SLT	SHORELINE TYPE CATEGORY	

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2H080 LAKE /POND
AREA

Attributes		PG Rules
HYC	HYDROGRAPHIC CATEGORY	A-0063
LEN	LENGTH /DIAMETER	L-4704
NAM	NAME CATEGORY	L-4709
RPA	REQUIRED FOR PORT ACCESS	L-4722
WID	WIDTH	L-4821
		L-4822
		R-2745
		R-3673

Inclusion Conditions:

RPA(REQUIRED PORT ACCESS) 1(ACCESS REQUIRED)
OR HYC(HYDROGRAPHIC CATEGORY) 8(PERENNIAL/PERMANENT)
and width >= 10 mm (map scale)
OR HYC(HYDROGRAPHIC CATEGORY) 8(PERENNIAL/PERMANENT)
and feature is needed to connect included drainage features

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2H090 LAND SUBJECT TO INUNDATION
AREA

Attributes		PG Rules
WID	WIDTH	R-2928

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Inland Water (2H)

2H090 LAND SUBJECT TO INUNDATION (Cont.)
AREA

Inclusion Conditions:

Width >= 10 mm (map scale)

*HAC 3

2H120 RAPIDS
LINE

Attributes		PG Rules
IWO	INLAND WATER OBSTRUCTION	L-4823
WID	WIDTH	R-2429
		R-2745
		R-2929

Inclusion Conditions:

IWO(INLAND WATER OBSTRUCTION) 1(OBSTRUCTION)

*HAC 3

2H140 RIVER /STREAM
AREA

Attributes		PG Rules
ACC	ACCURACY CATEGORY	D-1911
HYC	HYDROGRAPHIC CATEGORY	L-4770
NAM	NAME CATEGORY	L-4824
RPA	REQUIRED FOR PORT ACCESS	R-2299
SLT	SHORELINE TYPE CATEGORY	R-2429
TID	TIDAL /NON-TIDAL CATEGORY	R-2745
WID	WIDTH	R-2747
		R-3673
		S-1500
		T-0840

Inclusion Conditions:

HYC(HYDROGRAPHIC CATEGORY) 6(NON-PERENNIAL/INTERMITTENT/FLUCTUATING) or 8(PERENNIAL/PERMANENT) and width >= 1 mm (map scale)

LINE

Attributes		PG Rules
HYC	HYDROGRAPHIC CATEGORY	D-1911
LEN	LENGTH /DIAMETER	L-4743
NAM	NAME CATEGORY	R-2745
RPA	REQUIRED FOR PORT ACCESS	R-2930
WID	WIDTH	T-0838
		T-0839
		T-0840

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Inland Water (2H)

2H140 RIVER /STREAM (Cont.)
LINE

Inclusion Conditions:

HYC(HYDROGRAPHIC CATEGORY) 6(NON-PERENNIAL/INTERMITTENT/FLUCTUATING) or 8(PERENNIAL/PERMANENT)
and width < 1 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2H150 SALT EVAPORATOR
AREA

Attributes		PG Rules
WID	WIDTH	R-2800
		R-2913
		R-2931

Inclusion Conditions:

Width >= 7.5 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2H180 WATERFALL
LINE

Attributes		PG Rules
IWO	INLAND WATER OBSTRUCTION	L-4709
LEN	LENGTH /DIAMETER	L-4813
NAM	NAME CATEGORY	L-4823
		R-2745
		R-2929

Inclusion Conditions:

IWO(INLAND WATER OBSTRUCTION) 1(OBSTRUCTION)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2I020 DAM
AREA

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	L-4709
EXS	EXISTENCE CATEGORY	L-4823
IWO	INLAND WATER OBSTRUCTION	R-2745
MCP	MATERIAL COMPOSITION PRIMARY	R-2932
NAM	NAME CATEGORY	R-9035
TUC	TRANSPORTATION USE CATEGORY	V-1013
USE	USE STATUS	
WID	WIDTH	

Inclusion Conditions:

IWO(INLAND WATER OBSTRUCTION) 1(OBSTRUCTION)
and USE(USE CATEGORY) 10(OTHER)
and width >= 2 mm (map scale)
OR COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and USE(USE CATEGORY) 10(OTHER)
and width >= 2 mm (map scale)

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Miscellaneous Inland Water (2I)

2I020 DAM (Cont.)
LINE

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	L-4823
IWO	INLAND WATER OBSTRUCTION	L-4883
NAM	NAME CATEGORY	R-2745
USE	USE STATUS	R-2932
WID	WIDTH	

Inclusion Conditions:

IWO(INLAND WATER OBSTRUCTION) 1(OBSTRUCTION)
and USE(USE STATUS) 10(OTHER)
and width < 2 mm (map scale)
OR COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and USE(USE CATEGORY) 10(OTHER)
and width < 2 mm (map scale)
OR IWO(INLAND WATER OBSTRUCTION) 1(OBSTRUCTION)
and USE(USE STATUS) 73(FLOOD BARRAGE) or 86(FLOOD CONTROL AND/OR RATE MEASUREMENT)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2I030 LOCK
AREA

Attributes		PG Rules
NAM	NAME CATEGORY	L-4709
RPA	REQUIRED FOR PORT ACCESS	L-4823
WID	WIDTH	L-4825
		R-2745
		R-2935
		R-3726
		R-9037

Inclusion Conditions:

Width >= 1 mm (map scale)
and RPA(REQUIRED PORT ACCESS) 1(ACCESS REQUIRED)

POINT

Attributes		PG Rules
RPA	REQUIRED FOR PORT ACCESS	L-4823
WID	WIDTH	R-2371
		R-2745
		R-2935

Inclusion Conditions:

Width < 1 mm (map scale)
and RPA(REQUIRED PORT ACCESS) 1(ACCESS REQUIRED)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2J030 GLACIER
AREA

Attributes		PG Rules
	NO ATTRIBUTE REQUIRED	R-9037

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Hydrography (2)
SUBCATEGORY: Snow /Ice (2J)

2J030 GLACIER (Cont.)
AREA

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2J060 ICE PEAK, NUNATAK
POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	T-0841
HGT	HEIGHT ABOVE SURFACE LEVEL	

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2J065 ICE SHELF
AREA

Attributes	PG Rules
NO ATTRIBUTE REQUIRED	R-2256
	R-2804
	R-9037

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

2J100 SNOW FIELD /ICE FIELD
AREA

Attributes		PG Rules
SIC	SNOW /ICE CATEGORY	R-2800
WID	WIDTH	R-9037

Inclusion Conditions:

Width >= 10 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

3A010 CONTOUR (LAND)
LINE

Attributes		PG Rules
HQC	HYPSOGRAPHY PORTRAYAL CATEGORY	L-4786
ZVL	Z VALUE	R-2279
		R-2280
		R-2893
		R-2894
		T-0829

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: *Hypsography* (3)
SUBCATEGORY: Relief Portrayal (3A)

3A010 CONTOUR (LAND) (Cont.)
LINE

Inclusion Conditions:

HQC(HYPSOGRAPHY PORTRAYAL CATEGORY) 1(INDEX) or 2(INTERMEDIATE) or 3(SUPPLEMENTARY (1/2) or 4(FORM LINES) or 7(INDEX APPROXIMATE) or 12(INTERMEDIATE APPROXIMATE) or 13(SUPPLEMENTARY APPROXIMATE)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

3A030 SPOT ELEVATION
POINT

Attributes		PG Rules
ACC	ACCURACY CATEGORY	L-4719
ELA	ELEVATION ACCURACY	L-4720
ZVL	Z VALUE	L-4722
		L-4737
		L-4889
		R-2206
		R-2281
		R-2896
		T-0843

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

4A010 GROUND SURFACE
AREA

Attributes		PG Rules
MCP	MATERIAL COMPOSITION PRIMARY	R-9035
WID	WIDTH	

Inclusion Conditions:

MCP(MATERIAL COMPOSITION PRIMARY) 43(LAVA)
and width >= 5 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

4B010 BLUFF /CLIFF, ESCARPMENT
LINE

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	R-2291
DFS	DISTANCE FROM SHORELINE	
LEN	LENGTH /DIAMETER	
ZVL	Z VALUE	

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
OR DFS(DISTANCE FROM SHORELINE) <= 100 m
and ZVL(Z VALUE) >= 10 m
and length >= 10 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Physiography (4)
SUBCATEGORY: Landforms (4B)
*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

4B090 EMBANKMENT
AREA

Attributes		PG Rules
EFI	EMBANKMENT /FILL IDENTIFIER	R-2802
VRC	VERTICAL REFERENCE CATEGORY	R-3672
WID	WIDTH	R-3708

Inclusion Conditions:

Width >= 1 mm (map scale)
and EFI(EMBANKMENT/FILL IDENTIFIER) 3(CAUSEWAY)
and VRC(VERTICAL REFERENCE CATEGORY) 1(ABOVE SURFACE/DOES NOT COVER (AT HIGH WATER)) or 8(COVERS AND UNCOVERS)

LINE

Attributes		PG Rules
EFI	EMBANKMENT /FILL IDENTIFIER	L-4743
LEN	LENGTH /DIAMETER	R-2802
VRC	VERTICAL REFERENCE CATEGORY	R-3672
WID	WIDTH	R-3708

Inclusion Conditions:

Width < 1 mm
and length >= 1 mm (map scale)
and EFI(EMBANKMENT/FILL IDENTIFIER) 3(CAUSEWAY)
and VRC(VERTICAL REFERENCE CATEGORY) 1(ABOVE SURFACE/DOES NOT COVER (AT HIGH WATER)) or 8(COVERS AND UNCOVERS)
OR EFI(EMBANKMENT/FILL IDENTIFIER) 2(LEVEE/DIKE)
and length >= 3 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

4B135 ISLAND
AREA

Attributes		PG Rules
LEN	LENGTH /DIAMETER	L-4704
NAM	NAME CATEGORY	L-4709
WID	WIDTH	R-2423
		R-2736

Inclusion Conditions:

Length >= 0.2 mm (map scale)

POINT

Attributes		PG Rules
LEN	LENGTH /DIAMETER	L-4709
NAM	NAME CATEGORY	R-2736

Inclusion Conditions:

Length < 0.2 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Physiography (4)
SUBCATEGORY: Landforms (4B)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

4B170 *SAND DUNES /SAND HILLS*
AREA

Attributes		PG Rules
LEN	LENGTH /DIAMETER	L-4705
WID	WIDTH	L-4722

Inclusion Conditions:

Width >= 4 mm
and length >= 8 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

4B180 VOLCANO
AREA

Attributes		PG Rules
ACC	ACCURACY CATEGORY	L-4700
DAT	DATE CATEGORY	L-4707
EXS	EXISTENCE CATEGORY	L-4708
LOC	LOCATION /ORIGIN CATEGORY	L-4709
NAM	NAME CATEGORY	L-4722
		O-3411

Inclusion Conditions:

LOC(LOCATION/ORIGIN CATEGORY) 6(BELOW WATER SURFACE)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

5C030 TREES
AREA

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	O-3429
DFS	DISTANCE FROM SHORELINE	O-3432
EXS	EXISTENCE CATEGORY	R-2826
PHT	PREDOMINANT HEIGHT	R-2976
TRE	TREE CATEGORY	
VEG	VEGETATION CHARACTERISTICS	
WID	WIDTH	

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and EXS(EXISTENCE CATEGORY) 42(NOT ISOLATED)
and DFS(DISTANCE FROM SHORELINE) <= 2,000 m
and VEG(VEGETATION CHARACTERISTICS) 11(CASUARINA) or 12(CONIFEROUS) or 16(NIPA PALM) or 17(PALM) or 18(FILAO) or 20(CYPRUS) or 21(OTHER) or 31(EUCALYPTUS)
OR EXS(EXISTENCE CATEGORY) 42(NOT ISOLATED)
and DFS(DISTANCE FROM SHORELINE) <= 2,000 m
and VEG(VEGETATION CHARACTERISTICS) 19(MANGROVE)

POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	D-7011
DFS	DISTANCE FROM SHORELINE	
EXS	EXISTENCE CATEGORY	
TRE	TREE CATEGORY	
VEG	VEGETATION CHARACTERISTICS	

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Vegetation (5)
SUBCATEGORY: Woodland (5C)

5C030 TREES (Cont.)
POINT

Inclusion Conditions:

COC(CONSPICUOUS OBJECT CATEGORY) 1(CONSPICUOUS)
and EXS(EXISTENCE CATEGORY) 31(ISOLATED)
and VEG(VEGETATION CHARACTERISTICS) 11(CASUARINA) or 12(CONIFEROUS) or 16(NIPA PALM) or 17(PALM) or 18(FILAO) or 31(EUCALYPTUS)
and DFS(DISTANCE FROM SHORELINE) <= 2,000 m

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

5D030 SWAMP
AREA

Attributes		PG Rules
ARA	AREA COVERAGE ATTRIBUTE	R-2202
DFS	*DISTANCE FROM SHORELINE*	R-2800
HYC	HYDROGRAPHIC CATEGORY	R-2826
TID	TIDAL /NON-TIDAL CATEGORY	
VRC	VERTICAL REFERENCE CATEGORY	

Inclusion Conditions:

HYC(HYDROGRAPHIC CATEGORY) 8(PERENNIAL/PERMANENT)
and DFS(DISTANCE FROM SHORELINE) <= 100 m
and area >= 6.25 mm square (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

5D040 MARSH
AREA

Attributes		PG Rules
ARA	AREA COVERAGE ATTRIBUTE	R-2202
DFS	DISTANCE FROM SHORELINE	R-2800
HYC	HYDROGRAPHIC CATEGORY	R-2826
TID	TIDAL /NON-TIDAL CATEGORY	
VRC	VERTICAL REFERENCE CATEGORY	

Inclusion Conditions:

HYC(HYDROGRAPHIC CATEGORY) 8(PERENNIAL/PERMANENT)
and DFS(DISTANCE FROM SHORELINE) <= 100 m
and area >= 6.25 mm square (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6A000 ADMINISTRATIVE BOUNDARY
LINE

Attributes		PG Rules
ACC	ACCURACY CATEGORY	L-4707
BST	BOUNDARY STATUS TYPE	L-4713
NM3	NAME 3	L-4746
NM4	NAME 4	L-4879
USE	USE STATUS	R-2497
		R-2801
		R-2836
		R-2838
		R-2844

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Demarcation (6)
SUBCATEGORY: Boundaries /Limits /Zones (Topographic) (6A)

6A000 ADMINISTRATIVE BOUNDARY (Cont.)
LINE

Inclusion Conditions:

USE(USE STATUS) 23(INTERNATIONAL) or 32(INSULAR)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6A020 ARMISTICE LINE
LINE

Attributes		PG Rules
NM3	NAME 3	L-4713
NM4	NAME 4	R-2801
		R-2838
		R-2844

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6A030 CEASE-FIRE LINE
LINE

Attributes	PG Rules
NO ATTRIBUTE REQUIRED	L-4714
	R-2801
	R-2838
	R-2844

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6A040 CLAIM LINE
LINE

Attributes		PG Rules
NM3	NAME 3	L-4714
TXT	TEXT ATTRIBUTE	R-2801
		R-2838
		R-2844

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6A050 INTERNATIONAL MARITIME BOUNDARY
LINE

Attributes		PG Rules
NM3	NAME 3	L-3803
NM4	NAME 4	R-2756
TXT	TEXT ATTRIBUTE	

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Demarcation (6)
SUBCATEGORY: Boundaries /Limits /Zones (Topographic) (6A)

6A050 INTERNATIONAL MARITIME BOUNDARY (Cont.)
LINE

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6A060 DEFACTO BOUND. /OTHER LINE OF SEPARATION
LINE

Attributes		PG Rules
ACC	ACCURACY CATEGORY	L-4707
NM3	NAME 3	L-4713
NM4	NAME 4	R-2276
TXT	TEXT ATTRIBUTE	R-2801
USE	USE STATUS	R-2838
		R-2844

Inclusion Conditions:

USE(USE STATUS) 23(INTERNATIONAL)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6A070 DEMILITARIZED ZONE
AREA

Attributes	PG Rules
NO ATTRIBUTE REQUIRED	L-4714
	R-2800
	R-2801
	R-2838
	R-2884

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6A170 ZONE OF OCCUPATION
AREA

Attributes		PG Rules
NM3	NAME 3	L-4714
		R-2800
		R-2801
		R-2838
		R-2844

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6C035 DIRECTION OF BUOYAGE INDICATOR
POINT

Attributes		PG Rules
DOF	DIRECTION OF FLOW	L-3804
		R-2757

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Demarcation (6)
SUBCATEGORY: Boundaries /Limits /Zones (Hydrographic) (6C)

6C035 DIRECTION OF BUOYAGE INDICATOR (Cont.)
POINT

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6C040 DREDGED CHANNEL /DREDGED AREA
AREA

Attributes		PG Rules
ATN	AIDS TO NAVIGATION	L-4702
DAN	DESCRIPTION OF AIDS TO NAVIGATION	L-4747
DAT	DATE CATEGORY	L-4748
HDP	HYDROGRAPHIC DEPTH	R-2205
MAS	MAINTENANCE STATUS	R-2222
VDC	VERTICAL DATUM CATEGORY	R-2278
VDR	VERTICAL DATUM RECORD	R-2800
WID	WIDTH	R-2840
		R-2986
		V-1067

Inclusion Conditions:

Width >= 1 mm (map scale)

LINE

Attributes		PG Rules
ATN	AIDS TO NAVIGATION	L-4702
DAN	DESCRIPTION OF AIDS TO NAVIGATION	L-4743
DAT	DATE CATEGORY	L-4748
HDP	HYDROGRAPHIC DEPTH	R-2209
LEN	LENGTH /DIAMETER	R-2222
MAS	MAINTENANCE STATUS	R-2278
VDC	VERTICAL DATUM CATEGORY	R-2840
VDR	VERTICAL DATUM RECORD	V-1067
WID	WIDTH	

Inclusion Conditions:

Width < 1 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6C075 INSHORE TRAFFIC ZONE
AREA

Attributes		PG Rules
LEN	LENGTH /DIAMETER	L-4749
TSP	TRAFFIC SCHEME PART	O-3426
WID	WIDTH	R-2852

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Demarcation (6)
SUBCATEGORY: Boundaries /Limits /Zones (Hydrographic) (6C)

6C075 INSHORE TRAFFIC ZONE (Cont.)
AREA

Inclusion Conditions:

TSP(TRAFFIC SCHEME PART) 3(SEPARATION ZONE AREA)

LINE

Attributes		PG Rules
TSP	TRAFFIC SCHEME PART	L-4749 O-3426 R-2852

Inclusion Conditions:

TSP(TRAFFIC SCHEME PART) 2(OUTER BOUNDARY) or 4(SEPARATION ZONE LINE)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6C090 MARITIME LIMIT
AREA

Attributes		PG Rules	PG Rules
AOO	ANGLE OF ORIENTATION	L-4008	L-4753
COD	CERTAINTY OF DELINEATION	L-4715	R-2290
HOC	HYDROGRAPHIC ORIGIN CATEGORY	L-4722	R-2800
LEN	LENGTH /DIAMETER	L-4750	R-2985
MLT	MARITIME LIMIT TYPE	L-4751	R-2987
NAM	NAME CATEGORY	L-4752	R-3703
OPS	OPERATIONAL STATUS		
PBV	PILOT BOARDING VEHICLE		
PRO	PRODUCT CATEGORY		
TXT	TEXT ATTRIBUTE		
WID	WIDTH		

Inclusion Conditions:

MLT(MARITIME LIMIT TYPE) 1(OTHER) or 2(FAIRWAY) or 3(TURNING AREA) or 5(UNSURVEYED AREA) or 11(SUBMARINE EXERCISE AREA) or 12(MINE LAYING PRACTICE AREA) or 13(FIRING DANGER AREA) or 14(PRECAUTIONARY AREA) or 15(DUMPING GROUND FOR HAZARDOUS MATERIAL) or 18(OIL/GAS FIELD)
OR MLT(MARITIME LIMIT TYPE) 19(PILOT BOARDING AREA)
and length >= 20 mm (map scale)

LINE

Attributes		PG Rules
MLT	MARITIME LIMIT TYPE	L-4714 R-2762

Inclusion Conditions:

MLT(MARITIME LIMIT TYPE) 25(U.S. EXCLUSIVE ECONOMIC ZONE (EEZ))

POINT

Attributes		PG Rules
LEN	LENGTH /DIAMETER	L-4709
MLT	MARITIME LIMIT TYPE	L-4722
NAM	NAME CATEGORY	
PBV	PILOT BOARDING VEHICLE	

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Demarcation (6)
SUBCATEGORY: Boundaries /Limits /Zones (Hydrographic) (6C)

6C090 MARITIME LIMIT (Cont.)
POINT

Inclusion Conditions:

MLT(MARITIME LIMIT TYPE) 19(PILOT BOARDING AREA)
and length < 20 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6C100 MEASURED DISTANCE LINE
LINE

Attributes		PG Rules
BRR	BEARING AND RECIPROCAL CATEGORY	D-7012
LOR	LENGTH OF RANGE	L-4886
UNI	UNITS CATEGORY	

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6C110 MINE DANGER AREA
AREA

Attributes		PG Rules
AOO	ANGLE OF ORIENTATION	L-4715
COD	CERTAINTY OF DELINEATION	L-4722
EXS	EXISTENCE CATEGORY	L-4753
LEN	LENGTH /DIAMETER	L-4756
MAS	MAINTENANCE STATUS	O-3413
WID	WIDTH	R-2800
		R-2809

Inclusion Conditions:

COD(CERTAINTY OF DELINEATION) 1(LIMITS AND INFO KNOWN)
and EXS(EXISTENCE CATEGORY) 1(DEFINITE)
and length >= 4 mm (map scale)
OR COD(CERTAINTY OF DELINEATION) 2(LIMITS AND INFO UNKNOWN)
OR EXS(EXISTENCE CATEGORY) 3(REPORTED)

POINT

Attributes		PG Rules
COD	CERTAINTY OF DELINEATION	L-4722
EXS	EXISTENCE CATEGORY	O-3413
LEN	LENGTH /DIAMETER	R-2809
MAS	MAINTENANCE STATUS	

Inclusion Conditions:

Length < 4 mm (map scale)
and COD(CERTAINTY OF DELINEATION) 1(LIMITS AND INFO KNOWN)
and MAS(MAINTENANCE STATUS) 1(MAINTAINED)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Demarcation (6)
SUBCATEGORY: Boundaries /Limits /Zones (Hydrographic) (6C)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6C120 PROHIBITED AREA
AREA

Attributes		PG Rules
AOO	ANGLE OF ORIENTATION	L-4715
LEN	LENGTH /DIAMETER	L-4722
WID	WIDTH	L-4753
		R-2800

Inclusion Conditions:

Length >= 4 mm (map scale)

POINT

Attributes		PG Rules
LEN	LENGTH /DIAMETER	L-4722

Inclusion Conditions:

Length < 4 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6C130 RADAR REFERENCE LINE
LINE

Attributes		PG Rules
BRR	BEARING AND RECIPROCAL CATEGORY	L-4757

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6C150 RESTRICTED AREA
AREA

Attributes		PG Rules	PG Rules
AOO	ANGLE OF ORIENTATION	L-4715	R-2800
DTC	DANGER /OBSTRUCTION CATEGORY	L-4722	R-2846
LEN	LENGTH /DIAMETER	L-4753	R-2847
PRO	PRODUCT CATEGORY	L-4758	R-2937
RAA	RESTRICTED AREA ATTRIBUTE	L-4826	R-3678
USE	USE STATUS	L-4862	R-9034
WID	WIDTH	R-2218	

Inclusion Conditions:

Length >= 5 mm (map scale)
and DTC(DANGER/OBSTRUCTION CATEGORY) 14(FISHING PROHIBITED) or 16(OTHER) or 17(ANCHORING PROHIBITED) or 18(IMO AREA TO BE AVOIDED) or 19(SAFETY ZONE)
OR width >= 5 mm (map scale)
and DTC(DANGER/OBSTRUCTION CATEGORY) 12(CABLE AREA) or 13(PIPELINE AREA) or 15(CABLES AND PIPELINES) or 20(OUTFALL AREA) or 21(INTAKE AREA) or 22(SEWER AREA)

LINE

Attributes		PG Rules
DTC	DANGER /OBSTRUCTION CATEGORY	L-4743
LEN	LENGTH /DIAMETER	L-4758
PRO	PRODUCT CATEGORY	L-4862
USE	USE STATUS	R-2219
WID	WIDTH	R-2220

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Demarcation (6)
SUBCATEGORY: Boundaries /Limits /Zones (Hydrographic) (6C)

6C150 RESTRICTED AREA (Cont.)
LINE

Attributes		PG Rules
		R-2937
		R-9034

Inclusion Conditions:

Width < 5 mm (map scale)
and DTC(DANGER/OBSTRUCTION CATEGORY) 12(CABLE AREA) or 13(PIPELINE AREA) or 15(CABLES AND PIPELINES) or 20(OUTFALL AREA) or 21(INTAKE AREA) or 22(SEWER AREA)

POINT

Attributes		PG Rules
DTC	DANGER /OBSTRUCTION CATEGORY	L-4722
LEN	LENGTH /DIAMETER	R-3678
RAA	RESTRICTED AREA ATTRIBUTE	
WID	WIDTH	

Inclusion Conditions:

Length < 5 mm (map scale)
and DTC(DANGER/OBSTRUCTION CATEGORY) 14(FISHING PROHIBITED) or 16(OTHER) or 17(ANCHORING PROHIBITED) or 18(IMO AREA TO BE AVOIDED) or 19(SAFETY ZONE)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6C160 ROUNDABOUT
AREA

Attributes		PG Rules
IAS	IMO APPROVAL STATUS	R-2821
TSP	TRAFFIC SCHEME PART	R-2848

Inclusion Conditions:

TSP(TRAFFIC SCHEME PART) 3(SEPARATION ZONE AREA)

LINE

Attributes		PG Rules
IAS	IMO APPROVAL STATUS	R-2821
TSP	TRAFFIC SCHEME PART	R-2848

Inclusion Conditions:

TSP(TRAFFIC SCHEME PART) 2(OUTER BOUNDARY)

POINT

Attributes		PG Rules
IAS	IMO APPROVAL STATUS	R-2271
TSP	TRAFFIC SCHEME PART	R-2821
		R-2848

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Demarcation (6)
SUBCATEGORY: Boundaries /Limits /Zones (Hydrographic) (6C)

6C160 ROUNDABOUT (Cont.)
POINT

Inclusion Conditions:

TSP(TRAFFIC SCHEME PART) 1(ARROW) or 5(SEPARATION ZONE POINT)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6C165 ROUTE
AREA

Attributes		PG Rules
HDI	HYDROGRAPHIC DEPTH /HEIGHT INFORMATION	L-4702
HDP	HYDROGRAPHIC DEPTH	L-4747
RTT	ROUTE TYPE ATTRIBUTE	L-4770
VDC	VERTICAL DATUM CATEGORY	R-2205
VDR	VERTICAL DATUM RECORD	R-2222
WID	WIDTH	R-2758

Inclusion Conditions:

RTT(ROUTE TYPE ATTRIBUTE) 4(DEEP WATER ROUTE) or 7(TWO-WAY ROUTE) or 8(MINESWEPT CHANNEL)

LINE

Attributes		PG Rules
ATN	AIDS TO NAVIGATION	D-7012
BRR	BEARING AND RECIPROCAL CATEGORY	L-4702
BRS	BEARING FROM SEAWARD	L-4709
DAN	DESCRIPTION OF AIDS TO NAVIGATION	L-4769
DOF	DIRECTION OF FLOW	L-4813
DRP	DESCRIPTION OF REFERENCE POINT	L-4880
EXS	EXISTENCE CATEGORY	R-2209
HDI	HYDROGRAPHIC DEPTH /HEIGHT INFORMATION	R-2222
HDP	HYDROGRAPHIC DEPTH	R-2820
NAM	NAME CATEGORY	R-2854
RTT	ROUTE TYPE ATTRIBUTE	
VDC	VERTICAL DATUM CATEGORY	
VDR	VERTICAL DATUM RECORD	

Inclusion Conditions:

RTT(ROUTE TYPE ATTRIBUTE) 2(RECOMMENDED TRACK FOR OTHER THAN DEEP DRAFT) or 3(RECOMMENDED TRACK FOR DEEP DRAFT VESSELS) or 5(RECOMMENDED ROUTE)

POINT

Attributes		PG Rules
DOF	DIRECTION OF FLOW	R-2289
RTT	ROUTE TYPE ATTRIBUTE	

Inclusion Conditions:

RTT(ROUTE TYPE ATTRIBUTE) 6(RECOMMENDED DIRECTION OF TRAFFIC FLOW)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Demarcation (6)
SUBCATEGORY: Boundaries /Limits /Zones (Hydrographic) (6C)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6C170 SAFETY FAIRWAY
AREA

Attributes		PG Rules
WID	WIDTH	L-4747 L-4772 R-2986

Inclusion Conditions:

Width >= 1 mm (map scale)

LINE

Attributes		PG Rules
WID	WIDTH	L-4743

Inclusion Conditions:

Width < 1 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6C177 SWEPT AREA
AREA

Attributes		PG Rules
DAT	DATE CATEGORY	L-4702
HDP	HYDROGRAPHIC DEPTH	L-4771
VDC	VERTICAL DATUM CATEGORY	R-2222
VDR	VERTICAL DATUM RECORD	R-2822
WID	WIDTH	R-2984 V-1067

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

6C180 TRAFFIC SEPARATION SCHEME
AREA

Attributes		PG Rules
IAS	IMO APPROVAL STATUS	O-3426
TSP	TRAFFIC SCHEME PART	R-2821
WID	WIDTH	R-2856

Inclusion Conditions:

TSP(TRAFFIC SCHEME PART) 3(SEPARATION ZONE AREA)

LINE

Attributes		PG Rules
IAS	IMO APPROVAL STATUS	O-3426
TSP	TRAFFIC SCHEME PART	R-2821
WID	WIDTH	R-2856

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: Demarcation (6)
SUBCATEGORY: Boundaries /Limits /Zones (Hydrographic) (6C)

6C180 TRAFFIC SEPARATION SCHEME (Cont.)
LINE

Inclusion Conditions:

TSP(TRAFFIC SCHEME PART) 2(OUTER BOUNDARY) or 4(SEPARATION ZONE LINE)

POINT

Attributes		PG Rules
DOF	DIRECTION OF FLOW	R-2816
IAS	IMO APPROVAL STATUS	R-2821
TSP	TRAFFIC SCHEME PART	R-2856

Inclusion Conditions:

TSP(TRAFFIC SCHEME PART) 1(ARROW)

*HAC 3

6C210 WORK IN PROGRESS AREA
AREA

Attributes		PG Rules
AOO	ANGLE OF ORIENTATION	L-4706
ATN	AIDS TO NAVIGATION	L-4722
COD	CERTAINTY OF DELINEATION	L-4753
DAN	DESCRIPTION OF AIDS TO NAVIGATION	L-4774
DAT	DATE CATEGORY	R-2857
LEN	LENGTH /DIAMETER	
WID	WIDTH	
WPC	WORK IN PROGRESS CATEGORY	

Inclusion Conditions:

Width >= 1 mm (map scale)
and WPC(WORK IN PROGRESS CATEGORY) 2(CONSTRUCTION OF STRUCTURES)
OR WPC(WORK IN PROGRESS CATEGORY) 1(LAND RECLAMATION)
OR COD(CERTAINTY OF DELINEATION) 2(LIMITS AND INFO UNKNOWN)

LINE

Attributes		PG Rules
COD	CERTAINTY OF DELINEATION	L-4706
DAT	DATE CATEGORY	L-4774
LEN	LENGTH /DIAMETER	R-2857
WID	WIDTH	
WPC	WORK IN PROGRESS CATEGORY	

Inclusion Conditions:

Width < 1 mm (map scale)
and COD(CERTAINTY OF DELINEATION) 1(LIMITS AND INFO KNOWN)
and WPC(WORK IN PROGRESS CATEGORY) 2(CONSTRUCTION OF STRUCTURE)

*HAC 3

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: General (9)
SUBCATEGORY: Magnetic Variation Info (9C)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

9C040 MAGNETIC DISTURBANCE AREA
AREA

Attributes		PG Rules
COD	CERTAINTY OF DELINEATION	L-4705
VAV	VARIATION ANOMALY VALUE	L-4722
		L-4737

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

9D012 MISCELLANEOUS CULTURAL FEATURE
AREA

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	L-4705
NAM	NAME CATEGORY	L-4709
TXT	TEXT ATTRIBUTE	L-4722
WID	WIDTH	

Inclusion Conditions:

Width >= 0.8 mm (map scale)

LINE

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	L-4709
LEN	*LENGTH /DIAMETER*	L-4743
NAM	NAME CATEGORY	
TXT	TEXT ATTRIBUTE	
WID	WIDTH	

Inclusion Conditions:

Width < 0.8 mm
and length >= 0.8 mm (map scale)

POINT

Attributes		PG Rules
COC	CONSPICUOUS OBJECT CATEGORY	L-4709
LEN	LENGTH /DIAMETER	L-4722
NAM	NAME CATEGORY	
TXT	TEXT ATTRIBUTE	

Inclusion Conditions:

Length < 0.8 mm (map scale)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

9D015 POINT OF CHANGE
POINT

Attributes		PG Rules
PCI	POINT OF CHANGE IDENTIFIER	R-2209

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: General (9)
SUBCATEGORY: Miscellaneous (9D)

9D015 POINT OF CHANGE (Cont.)
POINT

Inclusion Conditions:

PCI(POINT OF CHANGE IDENTIFIER) 7(DREDGED CHANNEL) or 8(RECOMMENDED TRACK FOR OTHER THAN DEEP DRAFT VESSELS) or 9(RECOMMENDED TRACK FOR DEEP DRAFT VESSELS)

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

9D040 NAMED LOCATION
AREA

Attributes		PG Rules
CSI	CATEGORY/SUBCATEGORY INDEX	L-3608
NAM	NAME CATEGORY	L-3609
PPL	POPULATED PLACE CATEGORY	L-4827
		L-4896
		R-2845

Inclusion Conditions:

All required

LINE

Attributes		PG Rules
CSI	CATEGORY/SUBCATEGORY INDEX	L-3608
NAM	NAME CATEGORY	L-3609
PPL	POPULATED PLACE CATEGORY	L-4827
		L-4896
		R-2845

Inclusion Conditions:

All required

POINT

Attributes		PG Rules
CSI	CATEGORY/SUBCATEGORY INDEX	L-3608
NAM	NAME CATEGORY	L-3609
PPL	POPULATED PLACE CATEGORY	L-4827
		L-4896
		R-2845

Inclusion Conditions:

All required

*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3*HAC 3

9D045 TEXT DESCRIPTION
AREA

Attributes		PG Rules
LAB	LABEL OF THE FEATURE	L-3809
VRC	VERTICAL REFERENCE CATEGORY	L-4893

TABLE I Feature/Attribute category, inclusion conditions, and product generation rules.

PRODUCT: HARBOR, APPROACH, AND COASTAL CHARTS (1:50,001 - 1:100,000)
CATEGORY: General (9)
SUBCATEGORY: Miscellaneous (9D)

9D045 ***TEXT DESCRIPTION*** ***(Cont.)***
AREA

Inclusion Conditions:

All required

LINE

Attributes		PG Rules
LAB	LABEL OF THE FEATURE	L-3809
VRC	VERTICAL REFERENCE CATEGORY	L-4893

Inclusion Conditions:

All required

POINT

Attributes		PG Rules
LAB	LABEL OF THE FEATURE	L-3809
VRC	VERTICAL REFERENCE CATEGORY	L-4893
		L-4897
		L-4899

Inclusion Conditions:

All required

*HAC 3

APPENDIX A

HARBOR, APPROACH, AND COASTAL CHART (HAC 3) PRODUCT RULES

10. SCOPE

10.1 Scope. This Appendix provides information about the product rules necessary for the production of Harbor, Approach, and Coastal Charts, at scales of 1:50,001 to 1:100,000. The information contained herein is intended for compliance.

20. APPLICABLE DOCUMENTS

20.1 Government documents.

20.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the current Department of Defense Index of Specifications and Standards (DODISS) and the supplement thereto, cited in the solicitation (see 6.2).

MILITARY SPECIFICATIONS

MIL-H-89201A(DMA) - General Military Specification for Harbor, Approach, and Coastal Charts (HAC-All Scales)

MILITARY STANDARDS

MIL-STD-2402(DMA) - MC&G Symbology for Graphic Products
MIL-STD-2403(DMA) - MC&G Product Generation Rules
MIL-STD-2408(DMA) - Glossary of Mapping, Charting & Geodesy Feature and Attribute Definitions

20.2 Order of precedence. In the event of a conflict between the text of this appendix and either Table I of this specification, or MIL-STD-2403 cited above, the Table I and MIL-STD-2403 take precedence.

30. PRODUCT RULES

30.1 Classification of rules. Rules are classified into the following types:

a. Displacement
b. Labeling
c. Override
d. Representation
e. Suppression
f. Thinning

30.2 Appendix organization This appendix lists the rule numbers and rule text for each feature type (area, line and point) of each FACS feature listed in Table I of this specification.

FEATURE: MINE...1A010 (AREA)

MINE...1A010 (AREA)

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

MINE...1A010 (POINT)

-

QUARRY...1A030 (AREA)

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

QUARRY...1A030 (POINT)

-

PROCESSING PLANT /TREATMENT PLANT...1C000 (AREA)

L-4705 Labeling areas, in order of preference:
(1) Centered in area on one line in the area, type is horizontal, reading left to right.
(2) Centered in area on one line in the area, oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(3) Centered in area on two approximately equal lines, without splitting a word, type is horizontal, reading left to right.
(4) Centered on two approximately equal lines without splitting a word, type is oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(5) Use Rule L-4722 for type placement if the area is too small to place the type inside the area.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

T-0815 *Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).*

POWER PLANT FACILITY...1D010 (AREA)

L-4705 Labeling areas, in order of preference:
(1) Centered in area on one line in the area, type is horizontal, reading left to right.
(2) Centered in area on one line in the area, oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(3) Centered in area on two approximately equal lines, without splitting a word, type is horizontal, reading left to right.
(4) Centered on two approximately equal lines without splitting a word, type is oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(5) Use Rule L-4722 for type placement if the area is too small to place the type inside the area.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

FEATURE: POWER PLANT FACILITY...1D010 (AREA)

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:
Hydro
power
plant

T-0815 Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).

CHIMNEY /SMOKESTACK...1F010 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-3805 If HGT is unknown, omit HGT label (including parentheses and overhead bar/ticks).

L-4722 *Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.*
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

O-3434 The minimum height requirement in the inclusion condition is ignored if: 1) the height (HGT) is unknown, or 2) the chart falls within an area defined as having sparse culture, or 3) no other landmark or navigational (area or point FACS Category 1 or Subcategory 2C) features are shown on the chart within 50 mm (at chart scale) of the feature.

R-2746 If a feature is symbolized by one of the following posicuts, and that posicut overprints the shoreline (2A010, 2H075), or other point symbols when oriented vertical, replace the posicut and label as indicated below. Type is upper case 7 point, with Posicut #55, if COC=001 (Conspicuous), and type is upper and lower case, with Posicut #7, if COC=002 (Not Conspicuous), or COC is not used for that feature.

Feature	Posicut	Label
1F010	6	Chy
1F070	9	Flare
1J050	13	Windmill (if PRO=019)
1J050	211	Windmotor (if PRO=036)
1L050	39	Sign
1L073	221	FS
1L130	63	Mon
1L240	68	Tr
1M080	69	Water Tr
1Q110	45	Mooring Mast
1T080	61	R Mast (if GUG=001)
1T080	62	R Tr (if GUG=000 or 002)

T-0811 If two or more feature symbols the with the same FACS code overprint, show one symbol, and if conspicuous (COC=001), show with plural legend, i.e., add "S" to CHY, TR, etc. If not conspicuous (COC=002), show the feature with the greatest elevation above sea level (ZVL). Remaining symbols shall be shown in true positions. If three features overprint, delete to maximize the number of features that do not overprint.

T-0815 Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).

T-0856 A non-conspicuous feature (COC=002) is not required if it is obscured from seaward by intervening terrain.

COOLING TOWER...1F030 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

FEATURE: COOLING TOWER...1F030 (POINT)

L-3805 If HGT is unknown, omit HGT label (including parentheses and overhead bar/ticks).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

O-3434 The minimum height requirement in the inclusion condition is ignored if: 1) the height (HGT) is unknown, or 2) the chart falls within an area defined as having sparse culture, or 3) no other landmark or navigational (area or point FACS Category 1 or Subcategory 2C) features are shown on the chart within 50 mm (at chart scale) of the feature.

T-0815 Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).

T-0856 A non-conspicuous feature (COC=002) is not required if it is obscured from seaward by intervening terrain.

CRANE...1F040 (POINT)

T-0812 If two features overprint, delete either one. If three or more features overprint, delete to maximize the number of features that do not overprint. Retain conspicuous features (COC=001) in preference to non-conspicuous features (COC=002).

FLARE PIPE...1F070 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-3805 If HGT is unknown, omit HGT label (including parentheses and overhead bar/ticks).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4737 Feature name /label shall be positioned parallel to lines of latitude and readable left to right.

O-3434 The minimum height requirement in the inclusion condition is ignored if: 1) the height (HGT) is unknown, or 2) the chart falls within an area defined as having sparse culture, or 3) no other landmark or navigational (area or point FACS Category 1 or Subcategory 2C) features are shown on the chart within 50 mm (at chart scale) of the feature.

FEATURE: FLARE PIPE...1F070 (POINT)

R-2746 If a feature is symbolized by one of the following posicuts, and that posicut overprints the shoreline (2A010, 2H075), or other point symbols when oriented vertical, replace the posicut and label as indicated below. Type is upper case 7 point, with Posicut #55, if COC=001 (Conspicuous), and type is upper and lower case, with Posicut #7, if COC=002 (Not Conspicuous), or COC is not used for that feature.

Feature	Posicut	Label
1F010	6	Chy
1F070	9	Flare
1J050	13	Windmill (if PRO=019)
1J050	211	Windmotor (if PRO=036)
1L050	39	Sign
1L073	221	FS
1L130	63	Mon
1L240	68	Tr
1M080	69	Water Tr
1Q110	45	Mooring Mast
1T080	61	R Mast (if GUG=001)
1T080	62	R Tr (if GUG=000 or 002)

T-0815 Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).

T-0856 A non-conspicuous feature (COC=002) is not required if it is obscured from seaward by intervening terrain.

BATTERY...1H020 (POINT)

T-0813 Delete the feature if it is inside a built-up area (1L020).

PORT...1H050 (AREA)

L-4705 Labeling areas, in order of preference:
(1) Centered in area on one line in the area, type is horizontal, reading left to right.
(2) Centered in area on one line in the area, oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(3) Centered in area on two approximately equal lines, without splitting a word, type is horizontal, reading left to right.
(4) Centered on two approximately equal lines without splitting a word, type is oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(5) Use Rule L-4722 for type placement if the area is too small to place the type inside the area.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4883 If the attribute value that labels a symbol is "unknown" or "other", label the symbol with the FACS Feature name.

T-0815 Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).

PORT...1H050 (POINT)

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

FEATURE: FORT...1H050 (POINT)

T-0815 Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).

WINDMILL /WINDMOTOR...1J050 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-3805 If HGT is unknown, omit HGT label (including parentheses and overhead bar/ticks).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

O-3434 The minimum height requirement in the inclusion condition is ignored if: 1) the height (HGT) is unknown, or 2) the chart falls within an area defined as having sparse culture, or 3) no other landmark or navigational (area or point FACS Category 1 or Subcategory 2C) features are shown on the chart within 50 mm (at chart scale) of the feature.

R-2746 If a feature is symbolized by one of the following posicuts, and that posicut overprints the shoreline (2A010, 2H075), or other point symbols when oriented vertical, replace the posicut and label as indicated below. Type is upper case 7 point, with Posicut #55, if COC=001 (Conspicuous), and type is upper and lower case, with Posicut #7, if COC=002 (Not Conspicuous), or COC is not used for that feature.

Feature	Posicut	Label
1F010	6	Chy
1F070	9	Flare
1J050	13	Windmill (if PRO=019)
1J050	211	Windmotor (if PRO=036)
1L050	39	Sign
1L073	221	FS
1L130	63	Mon
1L240	68	Tr
1M080	69	Water Tr
1Q110	45	Mooring Mast
1T080	61	R Mast (if GUG=001)
1T080	62	R Tr (if GUG=000 or 002)

T-0815 Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).

T-0856 A non-conspicuous feature (COC=002) is not required if it is obscured from seaward by intervening terrain.

STADIUM...1K160 (AREA)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-4705 Labeling areas, in order of preference:
(1) Centered in area on one line in the area, type is horizontal, reading left to right.
(2) Centered in area on one line in the area, oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(3) Centered in area on two approximately equal lines, without splitting a word, type is horizontal, reading left to right.
(4) Centered on two approximately equal lines without splitting a word, type is oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(5) Use Rule L-4722 for type placement if the area is too small to place the type inside the area.

FEATURE: STADIUM...1K160 (AREA)

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4813 Descriptive terms, e.g., "Canal" shall be shown if the name is not known. If the descriptive word appears in the name, for example, "PANAMA CANAL", the descriptive type shall not be shown, i.e., do not show "Panama Canal Canal".

STADIUM...1K160 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

BUILDING...1L015 (AREA)

D-1901 Displacement hierarchy:
Road (1P030) over building (1L015), separation shall be 0.5 mm at chart scale
Building (1L015) over railroad (1N010), separation shall be 0.5 mm at chart scale

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-4705 Labeling areas, in order of preference:
(1) Centered in area on one line in the area, type is horizontal, reading left to right.
(2) Centered in area on one line in the area, oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(3) Centered in area on two approximately equal lines, without splitting a word, type is horizontal, reading left to right.
(4) Centered on two approximately equal lines without splitting a word, type is oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(5) Use Rule L-4722 for type placement if the area is too small to place the type inside the area.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4712 If the name (NAM) is the only attribute shown next to a conspicuous building (1L015, COC=001), and the name is unknown, show the BFC label instead of the name. If BFC=007 (House of Worship), show the HWT label instead of the BFC label.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

FEATURE: BUILDING...1L015 (AREA)

O-3422 Portrayal of buildings:
If BFC=032 [Harbor Master's Office] and length < 3 mm, the feature should be a point feature.
If BFC=032 [Harbor Master's Office] and width < 2.5 mm and length >= 3 mm, break outline of building where it overprints Posicut #14.
If BFC=035 [Post Office] and length < 3 mm, the feature should be a point feature.
If BFC=035 [Post Office] and width < 2 mm and length >= 3 mm, break outline of building where it overprints Posicut # 25.
If BFC=031 [Customs House], BFC=033 [Health Office], or BFC=006 [Hospital] and length < 3 mm, the feature should be shown as a point feature.
If BFC=031 [Custom House], BFC=033 [Health Office], or BFC=006 [Hospital] and width < 3 mm and length >= 3 mm, break the outline of building where it overprints Posicuts # 24, # 26, or # 27.
If BFC=007 [House of Worship], and HWT=021 [Stupa] and length < 3 mm, the feature should be shown as a point feature.
If BFC=007 [House of Worship], and HWT=021 [Stupa] and width < 2.5 mm and length >= 3 mm, break outline of building where it overprints Posicut #29.
If BFC=007 [House of Worship], and HWT=002 [Cathedral], HWT=003 [Chapel], HWT=004 [Church], HWT=015 [Tabernacle], and length < 3 mm, the feature should be shown as a point feature.
If BFC=007 [House of Worship], and HWT=002 [Cathedral], HWT=003 [Chapel], HWT=004 [Church], HWT=015 [Tabernacle], and width < 2.5 mm, and length >= 3 mm, break outline of building where it overprints Posicut # 26.
If BFC=004 [Castle] and length < 3 mm, the feature should be shown as a point feature.
If BFC=007 [House of Worship], and HWT=011 [Pagoda], HWT=014 [Shrine], or HWT=016 [Temple] and length < 3 mm, the feature should be shown as a point feature.
If BFC=007 [House of Worship], and HWT=006 [Minaret], or HWT=009 [Mosque] and length < 3 mm, the feature should be shown as a point feature.
If BFC 004, 006, 031, 033, 035 or BFC=007 and HWT=002, 003, 004, 006, 009, 011, 014, 016, 021, then WID > 5 mm.
If BFC=032, then LEN <= 7 mm (point).
If BFC=004, 006, 031, 033, 035 or BFC=007 and HWT=002, 003, 004, 006, 009, 011, 014, 016, 021, then LEN <= 5 mm.

R-2292 Building (1L015) portrayal on HAC 1-3 shall be as follows:
1. If conspicuous (COC=001), show all.
2. If BFC=006 Hospital, 007 House of Worship, 027 Passenger Terminal, 031 Customs House, 032 Harbormaster's Office, 033 Health Office, 035 Post Office, show all.
3. If not conspicuous (COC=002), and not one of the BFCs listed above, retain or omit based on the following criteria:
a. Within Built-Up Area (1L020), show isolated buildings between the shore and the more solid line of buildings lining the first parallel street. Omit buildings inland of these.
b. Outside Built-Up Area (1L020), and DFS <= 500 meters, show all.
c. Outside Built-Up Area (1L020), and DFS > 500 meters, and <= 2000 meters, show generalized pattern sufficient to give a correct impression of building density.
d. DFS > 2000 meters, omit all.
e. Omit all mobile homes (1L015, BFC=063)

R-2293 Abandoned lighthouses (1L015, BFC=050, EXS=006) shall be shown as point features.

R-2837 If feature building superstructure addition (1L018) overprints area feature building (1L015), delete (1L015) boundary where it overprints. If feature (1L018) overprints point feature (1L015), delete point feature (1L015).

FEATURE: BUILDING...1L015 (AREA)

T-0814 If after representing the roads (1P030), the building features (1L015) coalesce, thin non-conspicuous (COC=002) buildings using the following rules and hierarchy:
(1) If BFC=006 (Hospital), 027 (Passenger Terminal), 031 (Customs House), 032 (Harbormaster's Office), 033 (Health Office), 035 (Post Office), 050 (Lighthouse), or 007 (House of Worship) that has any value of HWT, show all, do not thin.
(2) Thin by BFC value. The following is by order of importance:
BFC=003 (Capitol Building)
BFC=004 (Castle)
BFC=011 (Palace)
BFC=015 (School)
BFC=010 (Observatory)
BFC=012 (Police Station)
BFC=037 (Fire Station)
BFC=002 (Government Building)
BFC=053 (Court House)
BFC=005 (Government Administration Building)
BFC=052 (Diplomatic Building)
BFC=028 (Administration Building)
BFC=058 (Auditorium)
BFC=059 (Opera House)
BFC=001 (Fabrication Structure)
BFC=060 (Processing/Treatment)
BFC=061 (Power Generation)
BFC=024 (Warehouse)
BFC=018 (Cemetery Building)
BFC=029 (Aircraft Maintenance Shop)
BFC=030 (Hangar)
BFC=008 (Military Administration/Operations Building)
BFC=009 (Museum)
BFC=025 (Roundhouse)
BFC=026 (RR Storage/Repair Facility)
BFC=013 (Prison)
BFC=023 (Wind Tunnel)
BFC=057 (Telephone Exchange-Main)
BFC=017 (Multi-unit Dwelling)
BFC=051 (Hotel)
BFC=036 (Barracks/Dormitory)
BFC=054 (Newspaper Plant)
BFC=055 (Bank)
BFC=056 (Lab/Research Facility)
BFC=064 (Weather Station)
BFC=039 (Other)
BFC=000 (Unknown)
BFC=019 (Farm Building)
BFC=022 (Watermill/Gristmill)
BFC=062 (Pumphouse)
BFC=021 (Garage)
BFC=020 (Greenhouse)
BFC=016 (House)
BFC=038 (Shed)
BFC=040 (Kennel)
BFC=041 (Guard Shack)
BFC=042 (Guard Tower)
BFC=014 (Ranger Station)
Attribute COC=001 takes precedence over any COC=002, e.g., BFC=014 and COC=002 shall be the first to be deleted.

BUILDING...1L015 (POINT)

D-1901 Displacement hierarchy:
Road (1P030) over building (1L015), separation shall be 0.5 mm at chart scale
Building (1L015) over railroad (1N010), separation shall be 0.5 mm at chart scale

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

FEATURE: BUILDING...1L015 (POINT)

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4712 If the name (NAM) is the only attribute shown next to a conspicuous building (1L015, COC=001), and the name is unknown, show the BFC label instead of the name. If BFC=007 (House of Worship), show the HWT label instead of the BFC label.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4813 Descriptive terms, e.g., "Canal" shall be shown if the name is not known. If the descriptive word appears in the name, for example, "PANAMA CANAL", the descriptive type shall not be shown, i.e., do not show "Panama Canal Canal".

R-2292 Building (1L015) portrayal on HAC 1-3 shall be as follows:
1. If conspicuous (COC=001), show all.
2. If BFC=006 Hospital, 007 House of Worship, 027 Passenger Terminal, 031 Customs House, 032 Harbormaster's Office, 033 Health Office, 035 Post Office, show all.
3. If not conspicuous (COC=002), and not one of the BFCs listed above, retain or omit based on the following criteria:
a. Within Built-Up Area (1L020), show isolated buildings between the shore and the more solid line of buildings lining the first parallel street. Omit buildings inland of these.
b. Outside Built-Up Area (1L020), and DFS <= 500 meters, show all.
c. Outside Built-Up Area (1L020), and DFS > 500 meters, and <= 2000 meters, show generalized pattern sufficient to give a correct impression of building density.
d. DFS > 2000 meters, omit all.
e. Omit all mobile homes (1L015, BFC=063)

R-2837 If feature building superstructure addition (1L018) overprints area feature building (1L015), delete (1L015) boundary where it overprints. If feature (1L018) overprints point feature (1L015), delete point feature (1L015).

FEATURE: BUILDING...1L015 (POINT)

T-0814 If after representing the roads (1P030), the building features (1L015) coalesce, thin non-conspicuous (COC=002) buildings using the following rules and hierarchy:
(1) If BFC=006 (Hospital), 027 (Passenger Terminal), 031 (Customs House), 032 (Harbormaster's Office), 033 (Health Office), 035 (Post Office), 050 (Lighthouse), or 007 (House of Worship) that has any value of HWT, show all, do not thin.
(2) Thin by BFC value. The following is by order of importance:
BFC=003 (Capitol Building)
BFC=004 (Castle)
BFC=011 (Palace)
BFC=015 (School)
BFC=010 (Observatory)
BFC=012 (Police Station)
BFC=037 (Fire Station)
BFC=002 (Government Building)
BFC=053 (Court House)
BFC=005 (Government Administration Building)
BFC=052 (Diplomatic Building)
BFC=028 (Administration Building)
BFC=058 (Auditorium)
BFC=059 (Opera House)
BFC=001 (Fabrication Structure)
BFC=060 (Processing/Treatment)
BFC=061 (Power Generation)
BFC=024 (Warehouse)
BFC=018 (Cemetery Building)
BFC=029 (Aircraft Maintenance Shop)
BFC=030 (Hangar)
BFC=008 (Military Administration/Operations Building)
BFC=009 (Museum)
BFC=025 (Roundhouse)
BFC=026 (RR Storage/Repair Facility)
BFC=013 (Prison)
BFC=023 (Wind Tunnel)
BFC=057 (Telephone Exchange-Main)
BFC=017 (Multi-unit Dwelling)
BFC=051 (Hotel)
BFC=036 (Barracks/Dormitory)
BFC=054 (Newspaper Plant)
BFC=055 (Bank)
BFC=056 (Lab/Research Facility)
BFC=064 (Weather Station)
BFC=039 (Other)
BFC=000 (Unknown)
BFC=019 (Farm Building)
BFC=022 (Watermill/Gristmill)
BFC=062 (Pumphouse)
BFC=021 (Garage)
BFC=020 (Greenhouse)
BFC=016 (House)
BFC=038 (Shed)
BFC=040 (Kennel)
BFC=041 (Guard Shack)
BFC=042 (Guard Tower)
BFC=014 (Ranger Station)
Attribute COC=001 takes precedence over any COC=002, e.g., BFC=014 and COC=002 shall be the first to be deleted.

BUILDING SUPERSTRUCTURE ADDITION...1L018 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

FEATURE: BUILDING SUPERSTRUCTURE ADDITION...1L018 (POINT)

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4884 Labeling for RSU Values:
If RSU=002, label "DOME"
If RSU=003, label "SP"
If RSU=004, label "CUP"
If RSU=005, label "TR"

BUILT-UP AREA...1L020 (AREA)

R-2021 If two or more outlined areas merge (coalesce at map scale), they shall be enclosed in a single common area outline. Dividing outlines shall not be shown.

R-2474 Omit Built-up Area outline where coincident with other linear features.

BUILT-UP AREA...1L020 (POINT)

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MONUMENT...1L130 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-3805 If HGT is unknown, omit HGT label (including parentheses and overhead bar/ticks).

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4813 Descriptive terms, e.g., "Canal" shall be shown if the name is not known. If the descriptive word appears in the name, for example, "PANAMA CANAL", the descriptive type shall not be shown, i.e., do not show "Panama Canal Canal".

L-4883 If the attribute value that labels a symbol is "unknown" or "other", label the symbol with the FACS Feature name.

O-3434 The minimum height requirement in the inclusion condition is ignored if: 1) the height (HGT) is unknown, or 2) the chart falls within an area defined as having sparse culture, or 3) no other landmark or navigational (area or point FACS Category 1 or Subcategory 2C) features are shown on the chart within 50 mm (at chart scale) of the feature.

FEATURE: MONUMENT...1L130 (POINT)

R-2746 If a feature is symbolized by one of the following posicuts, and that posicut overprints the shoreline (2A010, 2H075), or other point symbols when oriented vertical, replace the posicut and label as indicated below. Type is upper case 7 point, with Posicut #55, if COC=001 (Conspicuous), and type is upper and lower case, with Posicut #7, if COC=002 (Not Conspicuous), or COC is not used for that feature.

Feature	Posicut	Label
1F010	6	Chy
1F070	9	Flare
1J050	13	Windmill (if PRO=019)
1J050	211	Windmotor (if PRO=036)
1L050	39	Sign
1L073	221	FS
1L130	63	Mon
1L240	68	Tr
1M080	69	Water Tr
1Q110	45	Mooring Mast
1T080	61	R Mast (if GUG=001)
1T080	62	R Tr (if GUG=000 or 002)

T-0856 A non-conspicuous feature (COC=002) is not required if it is obscured from seaward by intervening terrain.

PIPELINE /PIPE...1L160 (LINE)

L-4743 If feature type is linear, the label hierarchy is:
(1) Label shall be placed 1 mm above feature, centered.
(2) Top of label shall be placed 1 mm below feature, centered.
(3) Label may be displaced along the feature; use two labels if feature length 150 mm or greater.
(4) Do not label across shoreline (2A010 or 2H075).

L-4818 The datum above which Safe Overhead Clearances (SOC) are given shall be a high water datum, preferably Mean High Water Springs (VDC=009) where the tide is appreciable. If the tide is not appreciable, i.e., less than 0.3 meter, Mean Sea Level (VDC=015) may be used. SOC shall be rounded down to the nearest whole meter, unless under 10 meters, where it is rounded down to the nearest meter and decimeter value.

L-4862 Pipelines (1L160), pipeline areas (6C150, DTC=013), and cable and pipeline areas (6C150, DTC=015) shall show a label for the following PRO values, using the label shown below:

If PRO=006, label "Chem"
If PRO=012, label "Gas"
If PRO=013, label "Gasoline"
If PRO=018, label "Oil"
If PRO=027, label "Water"

No PRO label is shown for PRO=000 Unknown, PRO=019 Other, or PRO=035 Sewage.

O-3427 DEP is used when LOC=010 (Below Sea Bottom). If DEP is unknown, show as LOC=011 (On Sea Bottom).

FEATURE: PIPELINE /PIPE...1L160 (LINE)

R-2208 The attribute HSB is applicable when LOC=012 (Suspended or elevated above sea bottom). If a pipeline is LOC=012, and the height above the bottom is *unknown, a caution label (see Cautions section of product specification)* shall be shown near the feature, and the following caution shall be shown in the caution box:

CAUTION
Pipelines are elevated above the sea bottom, and the clearance over them is less than the charted depth.

If the feature is LOC=012, and the height above the bottom is known, the caution in the caution box shall be:

CAUTION
Pipelines are elevated up to (HSB) meters above the sea bottom, and the clearance over them is less than the charted depth.

The height above sea bottom (HSB) is indicated in the text of the note.

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum *when VDC is 023 (Other).* VDR is not applicable "NA" when VDC is any value except 023.

R-2744 Navigable water in the context of the OWO attribute is any open water *(2A040), or inland hydrographic feature river/stream (2H140),* lake/pond (2H080), or canal (2H020) that is required for port access (RPA=001).

R-2755 If the feature does not cross over navigable water, i.e., it is OWO=002, then *the SOC and SHC attributes are not applicable.*

R-2818 If Pipelines (1L160) or cables (1T005) in the water (LOC=010, 011, or 012) meet the following criteria, they are represented as pipeline areas (6C150, *DTC=013) or cable areas (6C150, DTC=012) respectively, rather than shown as* separate pipelines or cables. If Pipelines and cables together meet the following criteria, they are represented as "cables and pipelines area" (6C150, DTC=015).
Criteria:
a. more than two linear features, AND
b. space between any two linear features is less than 8 mm at chart scale, AND
c. space between the outermost linear features in the group is greater than 3 mm at chart scale

If more than two cables or pipelines are <= 3 mm apart at chart scale, show only the outermost linear features.

If cable symbols overprint other cable symbols, show one cable.
If pipeline symbols overprint other pipeline symbols, show one pipeline.
If cable symbols and pipeline symbols overprint, show a cable and pipeline area (6C150, DTC0=15).

The outermost limits of the cable, pipeline, or cables and pipeline area (6C150, DTC=012, 013, or 015) area feature are diplaced for 2 mm past the outermost cables and pipelines, so that the area within which anchoring, trawling, and dredging are prohibited or inadvisable includes a safety margin *beyond the outermost cables and/or pipelines.*

FEATURE: PIPELINE /PIPE...1L160 (LINE)

R-2937 Charts shall have the following caution notes shown in the margin if pipelines (1L160), pipeline areas (6C150, DTC=013), or cable and pipeline areas (6C150, DTC=015) are shown on the chart, and products are chemicals (PRO=006), gas (PRO=012), gasoline (PRO=013), or oil (PRO=018): .

CAUTION
Mariners risk prosecution if they anchor or trawl near a pipeline and so damage it. (PRO) leaking from a damaged pipeline could cause fire or loss of a vessel's buoyancy.

The product name (PRO) is indicated in the text of the note. PRO006 is shown in plural, i.e., "Chemicals." See Notes and Cautions section of product specifications for color, type size, type style, and other information regarding caution notes.

R-3669 SOC and VDC are required when OWO=001. VDR is required when VDC=023.

R-3697 Where a linear feature has a distance from shoreline (DFS) as its inclusion condition, and that linear feature does not fall completely within the area between the shoreline and the distance stated in the inclusion condition, show the feature continuously inland to distance equal to twice the DFS for that feature. At that point (twice the DFS) do not show any more of the feature until it once again meets twice the original DFS inclusion condition.

STEEPLE...1L220 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

TOWER (NON- COMMUNICATION)...1L240 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-3805 If HGT is unknown, omit HGT label (including parentheses and overhead bar/ticks).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

O-3434 The minimum height requirement in the inclusion condition is ignored if: 1) the height (HGT) is unknown, or 2) the chart falls within an area defined as having sparse culture, or 3) no other landmark or navigational (area or point FACS Category 1 or Subcategory 2C) features are shown on the chart within 50 mm (at chart scale) of the feature.

FEATURE: TOWER (NON- COMMUNICATION)...1L240 (POINT)

R-2746 If a feature is symbolized by one of the following posicuts, and that posicut overprints the shoreline (2A010, 2H075), or other point symbols when oriented vertical, replace the posicut and label as indicated below. Type is upper case 7 point, with Posicut #55, if COC=001 (Conspicuous), and type is upper and lower case, with Posicut #7, if COC=002 (Not Conspicuous), or COC is not used for that feature.

Feature	Posicut	Label
1F010	6	Chy
1F070	9	Flare
1J050	13	Windmill (if PRO=019)
1J050	211	Windmotor (if PRO=036)
1L050	39	Sign
1L073	221	FS
1L130	63	Mon
1L240	68	Tr
1M080	69	Water Tr
1Q110	45	Mooring Mast
1T080	61	R Mast (if GUG=001)
1T080	62	R Tr (if GUG=000 or 002)

T-0856 A non-conspicuous feature (COC=002) is not required if it is obscured from seaward by intervening terrain.

GRAIN ELEVATOR...1M030 (AREA)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

O-3434 The minimum height requirement in the inclusion condition is ignored if: 1) the height (HGT) is unknown, or 2) the chart falls within an area defined as having sparse culture, or 3) no other landmark or navigational (area or point FACS Category 1 or Subcategory 2C) features are shown on the chart within 50 mm (at chart scale) of the feature.

T-0815 Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).

T-0856 A non-conspicuous feature (COC=002) is not required if it is obscured from seaward by intervening terrain.

GRAIN ELEVATOR...1M030 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

O-3434 The minimum height requirement in the inclusion condition is ignored if: 1) the height (HGT) is unknown, or 2) the chart falls within an area defined as having sparse culture, or 3) no other landmark or navigational (area or point FACS Category 1 or Subcategory 2C) features are shown on the chart within 50 mm (at chart scale) of the feature.

FEATURE: GRAIN ELEVATOR...1M030 (POINT)

T-0856 A non-conspicuous feature (COC=002) is not required if it is obscured from seaward by intervening terrain.

SILO...1M050 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-3805 If HGT is unknown, omit HGT label (including parentheses and overhead bar/ticks).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

O-3434 The minimum height requirement in the inclusion condition is ignored if: 1) the height (HGT) is unknown, or 2) the chart falls within an area defined as having sparse culture, or 3) no other landmark or navigational (area or point FACS Category 1 or Subcategory 2C) features are shown on the chart within 50 mm (at chart scale) of the feature.

T-0815 Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).

T-0856 A non-conspicuous feature (COC=002) is not required if it is obscured from seaward by intervening terrain.

TANK...1M070 (AREA)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4883 If the attribute value that labels a symbol is "unknown" or "other", label the symbol with the FACS Feature name.

O-3434 The minimum height requirement in the inclusion condition is ignored if: 1) the height (HGT) is unknown, or 2) the chart falls within an area defined as having sparse culture, or 3) no other landmark or navigational (area or point FACS Category 1 or Subcategory 2C) features are shown on the chart within 50 mm (at chart scale) of the feature.

T-0815 Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).

T-0818 (1) If features overprint or are separated by less than 2 mm at chart scale, thin using the following hierarchy, i.e., (a) would be thinned last:
(a) Attribute COC=001
(b) Closest to shoreline (2A010, 2H075)
(c) Highest - attribute ZVL
(d) Largest - diameter
(2) Delete features until separation is >= 2 mm at chart scale.
(3) If, after following #1 and #2, there are >= 9 features in one sq. cm., delete features, using the hierarchy in #1 until separation is >= 4 mm at chart scale.

T-0856 A non-conspicuous feature (COC=002) is not required if it is obscured from seaward by intervening terrain.

TANK...1M070 (POINT)

FEATURE: TANK...1M070 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

O-3434 The minimum height requirement in the inclusion condition is ignored if: 1) the height (HGT) is unknown, or 2) the chart falls within an area defined as having sparse culture, or 3) no other landmark or navigational (area or point FACS Category 1 or Subcategory 2C) features are shown on the chart within 50 mm (at chart scale) of the feature.

T-0815 Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).

T-0818 (1) If features overprint or are separated by less than 2 mm at chart scale, thin using the following hierarchy, i.e., (a) would be thinned last:
(a) Attribute COC=001
(b) Closest to shoreline (2A010, 2H075)
(c) Highest - attribute ZVL
(d) Largest - diameter
(2) Delete features until separation is >= 2 mm at chart scale.
(3) If, after following #1 and #2, there are >= 9 features in one sq. cm., delete features, using the hierarchy in #1 until separation is >= 4 mm at chart scale.

T-0856 A non-conspicuous feature (COC=002) is not required if it is obscured from seaward by intervening terrain.

WATER TOWER...1M080 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-3805 If HGT is unknown, omit HGT label (including parentheses and overhead bar/ticks).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

O-3434 The minimum height requirement in the inclusion condition is ignored if: 1) the height (HGT) is unknown, or 2) the chart falls within an area defined as having sparse culture, or 3) no other landmark or navigational (area or point FACS Category 1 or Subcategory 2C) features are shown on the chart within 50 mm (at chart scale) of the feature.

FEATURE: WATER TOWER...1M080 (POINT)

R-2746 If a feature is symbolized by one of the following posicuts, and that posicut overprints the shoreline (2A010, 2H075), or other point symbols when oriented vertical, replace the posicut and label as indicated below. Type is upper case 7 point, with Posicut #55, if COC=001 (Conspicuous), and type is upper and lower case, with Posicut #7, if COC=002 (Not Conspicuous), or COC is not used for that feature.

Feature	Posicut	Label
1F010	6	Chy
1F070	9	Flare
1J050	13	Windmill (if PRO=019)
1J050	211	Windmotor (if PRO=036)
1L050	39	Sign
1L073	221	FS
1L130	63	Mon
1L240	68	Tr
1M080	69	Water Tr
1Q110	45	Mooring Mast
1T080	61	R Mast (if GUG=001)
1T080	62	R Tr (if GUG=000 or 002)

T-0815 Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).

T-0856 A non-conspicuous feature (COC=002) is not required if it is obscured from seaward by intervening terrain.

RAILROAD TRACK...1N010 (LINE)

D-1901 Displacement hierarchy:
Road (1P030) over building (1L015), separation shall be 0.5 mm at chart scale
Building (1L015) over railroad (1N010), separation shall be 0.5 mm at chart scale

D-1902 If EXS=006 (abandoned), feature may be displaced up to 3 mm at chart scale. If feature still overprints other feature symbols that are not EXS=006, delete the EXS=006 feature.

O-3430 In undeveloped areas, the depiction of railways to isolated ports draws attention to such ports, and may be of some maritime interest for transport purposes. Therefore, in areas designated as sparse culture/transportation, the DFS restriction shall be removed, and all operational (EXS=028), and all abandoned (EXS=006) railroads shall be shown.

R-3697 Where a linear feature has a distance from shoreline (DFS) as its inclusion condition, and that linear feature does not fall completely within the area between the shoreline and the distance stated in the inclusion condition, show the feature continuously inland to distance equal to twice the DFS for that feature. At that point (twice the DFS) do not show any more of the feature until it once again meets twice the original DFS inclusion condition.

ROAD...1P030 (LINE)

D-1904 Do not displace for features Building (1L015), Railroad Track (1N010), and Tramway/Inclined Railway (1N090).

D-1905 If <= 0.2 mm from shoreline and parallel for a minimum length of 5 mm, displace to avoid overprinting shoreline (2A010 or 2H075).

O-3436 In largely undeveloped areas, with few if any major roads (1P030), it may be desirable to show even minor roads or cart tracks (1P010), inland to a distance (DFS) of up to 6000 meters.

R-2297 Roads (1P030) and cart tracks (1P010) running down to the coast (2A010, 2H075) shall be charted where scale permits. Particular attention should be given to roads servicing piers (2B090) and landings (2B150). Inland, major roads within 6000 meters of the shoreline shall be charted to give a general indication of the degree of development, but tracks and minor roads should be omitted. Inland of 6000 meters, all road should be omitted.

FEATURE: ROAD...1P030 (LINE)

R-2298 Within built-up areas (1L020), major roads and streets (1P030) should be shown in port areas, adjacent to the coast, and elsewhere, if significant for marine navigation. Urban areas are to be divided into a number of blocks by diagramatic representation of major streets, in the actual street pattern. The size of the blocks shall depend on chart scale, decreasing as scale decreases. Names of streets are not of much value, but exceptionally, may be shown on large scale charts (HAC 1), if the need arises.

R-3697 Where a linear feature has a distance from shoreline (DFS) as its inclusion condition, and that linear feature does not fall completely within the area between the shoreline and the distance stated in the inclusion condition, show the feature continuously inland to distance equal to twice the DFS for that feature. At that point (twice the DFS) do not show any more of the feature until it once again meets twice the original DFS inclusion condition.

R-3699 If a divided road (MED=001) has opposing lanes spaced less than 0.25 mm away at chart scale (symbol-edge to edge), combine into one road symbol. If the divided road symbols are 0.25 mm or more away from each other, show each direction in true position. Where transition occurs between single and double line roads, feather roads together for a smooth transition.

If two unrelated roads run parallel to each other (do not join), and overprint each other or are less than 0.25 mm away at chart scale (symbol-edge to edge), displace roads apart to 0.25 mm.

AERIAL CABLEWAY LINE /SKI LIFT LINE...1Q010 (LINE)

D-7012 Break line symbol in water area for overprinting point symbol with the same color. Leave space 0.5 mm on each side of the point symbol. Do not displace either the line symbol or the point symbol. Point symbols may overprint line symbols of a different color.

L-4775 If attribute SHC and /or SOC is unknown or cannot be determined, omit window and associated /bounding lines.

L-4804 The attribute SOC and the associated bars shall be positioned reading horizontal, in the following priority:

a. In the water, alongside the feature, without overprinting other hydrographic detail.

b. If necessary to avoid overprints, label may be placed on land, adjacent to the feature.

L-4818 The datum above which Safe Overhead Clearances (SOC) are given shall be a high water datum, preferably Mean High Water Springs (VDC=009) where the tide is appreciable. If the tide is not appreciable, i.e., less than 0.3 meter, Mean Sea Level (VDC=015) may be used. SOC shall be rounded down to the nearest whole meter, unless under 10 meters, where it is rounded down to the nearest meter and decimeter value.

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2744 Navigable water in the context of the OWO attribute is any open water (2A040), or inland hydrographic feature river/stream (2H140), lake/pond (2H080), or canal (2H020) that is required for port access (RPA=001).

R-2755 If the feature does not cross over navigable water, i.e., it is OWO=002, then the SOC and SHC attributes are not applicable.

R-2877 Show feature only between the first pylon or pole on each bank.

BRIDGE /OVERPASS /VIADUCT...1Q040 (LINE)

FEATURE: BRIDGE /OVERPASS /VIADUCT...1Q040 (LINE)

L-4814 If BDC=012, place label "Transporter" 1 mm above or to the left of the major axis, starting 1.5 mm from wing on the left side, or bottom if major axis is vertical.

L-4815 Label for EXS=005 shall be "Under constr." followed by the date of the activity (DAT) in parentheses. The label for EXS=007 shall be "Destroyed" If DAT is unknown, or EXS=028 Operational, omit DAT label and parentheses.

a. For area bridges, EXS and DAT label placement shall be centered on the length of the bridge, between casings of area symbol, where space permits, reading left to right, or bottom to top if bridge is vertical. If labels cannot be placed between the bridge casings, position labels as for line bridges.

b. For line bridges, EXS and DAT label placement shall be centered on the length of the bridge, 1.0mm above bridge, reading left to right, or to left of bridge symbol, reading bottom to top, if bridge is vertical.

Placement of SOC and SHC labels shall be below bridge, or to the right of the bridge, if bridge is vertical, and shall be in accordance with PG rules L-4804 and L-4805.

L-4861 If BOT=000 (Unknown), or if BOT=013 (Fixed/Not Applicable), omit BOT label. If BOT=015 (Other), label opening type using 9D045 Text Description.

L-4863 Placement for NAM and BOT labels shall be above the bridge, or on the left side of the bridge, if bridge is vertical. If there is insufficient space, or labels will obscure hydrographic detail, NAM and BOT labels may be placed on land, adjacent to the bridge.

L-4890 Abbreviations for BOT values:
BOT=004 Draw
BOT=012 Retract

O-3437 Bridges (1Q040) shall be shown if they pass over an area water feature (2A040 open water, 2H020 canal, 2H030 ditch, 2H080 lake/pond, 2H140 river/stream) and support a road (1P030), railroad (1N010), or siding/spur (1N050) shown on the chart.

R-2286 Submersible bridges are bridges that have movable spans which are lowered below the water surface so that vessels can pass over them. They shall be shown as fixed bridges (1Q040, BOT=013), with a label (9D045 Text Description, VRC=001) reading: "Submersible bridge, (depth)m below datum when lowered" with the depth of the lowered span below chart sounding datum inserted into the note.

R-2744 Navigable water in the context of the OWO attribute is any open water (2A040), or inland hydrographic feature river/stream (2H140), lake/pond (2H080), or canal (2H020) that is required for port access (RPA=001).

R-2755 If the feature does not cross over navigable water, i.e., it is OWO=002, then the SOC and SHC attributes are not applicable.

R-2804 When an area symbol or cased line symbol overprints the shoreline, shoreline is deleted.

R-9035 Show land tint inside the symbol.

BRIDGE SPAN...1Q045 (LINE)

L-4775 If attribute SHC and /or SOC is unknown or cannot be determined, omit window and associated /bounding lines.

L-4804 The attribute SOC and the associated bars shall be positioned reading horizontal, in the following priority:
a. In the water, alongside the feature, without overprinting other hydrographic detail.
b. If necessary to avoid overprints, label may be placed on land, adjacent to the feature.

FEATURE: BRIDGE SPAN...1Q045 (LINE)

L-4805 The SHC figure, if shown, shall be placed next to the SOC figure, with the number reading horizontal, i.e., the SHC bars vertical. If placed in the water, it shall not overprint other hydrographic detail.

L-4818 The datum above which Safe Overhead Clearances (SOC) are given shall be a high water datum, preferably Mean High Water Springs (VDC=009) where the tide is appreciable. If the tide is not appreciable, i.e., less than 0.3 meter, Mean Sea Level (VDC=015) may be used. SOC shall be rounded down to the nearest whole meter, unless under 10 meters, where it is rounded down to the nearest meter and decimeter value.

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-3671 Movable Bridge Spans (BSM=001) are overprinted on bridge symbols when the bridge has an opening span (BOT=004, 010, 011, 012, or 015). Area bridge span symbols are overprinted on area bridge symbols, and indicate the shape of the opening span at scale. Line bridge span symbols are overprinted on line bridge symbols, and indicate the length of the opening span at scale. The bridge span line symbols (not including wing ticks) are shown across the bridge. The edges of the bridge span that are coincident with the edge of the bridge are not symbolized.

CONTROL TOWER...1Q060 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

T-0815 Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).

FERRY CROSSING...1Q070 (LINE)

L-4778 If attribute FER=001 (Ferry with cables), placement priority is as follows:
(a) 1 mm above dashed line, centered between the boat and the shoreline on the west or south side of the boat.
(b) Stacked with "Cable" above dashed line and "Ferry" below dashed line, 1 mm separation from line, centered as in #a.
(c) Stacked and centered above and below boat symbol with 1 mm separation. "Cable" is above and "Ferry" below.
(d) Stacked and placed on shore, either bank with 1 mm separation between the shoreline and words "Cable" and "Ferry" and parallel to lines of latitude.

R-2740 Ferry crossings (1Q070) are shown when they cross fairly narrow channels where through-traffic needs to be warned of their existence, and where ferry tracks are short enough to be reasonably accurately represented. Long distance ferries, which have routes varying with weather, tide, and traffic should not be shown, although the terminals are shown on large scale charts (1Q080 on HAC 1). Where ferries cross congested traffic schemes, a cautionary note should be shown.

R-2878 The boat symbol shall be centered on the dashed line and between shorelines.

MOORING MAST...1Q110 (POINT)

FEATURE: MOORING MAST...1Q110 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

R-2746 If a feature is symbolized by one of the following posicuts, and that posicut overprints the shoreline (2A010, 2H075), or other point symbols when oriented vertical, replace the posicut and label as indicated below. Type is upper case 7 point, with Posicut #55, if COC=001 (Conspicuous), and type is upper and lower case, with Posicut #7, if COC=002 (Not Conspicuous), or COC is not used for that feature.

Feature	Posicut	Label
1F010	6	Chy
1F070	9	Flare
1J050	13	Windmill (if PRO=019)
1J050	211	Windmotor (if PRO=036)
1L050	39	Sign
1L073	221	FS
1L130	63	Mon
1L240	68	Tr
1M080	69	Water Tr
1Q110	45	Mooring Mast
1T080	61	R Mast (if GUG=001)
1T080	62	R Tr (if GUG=000 or 002)

T-0815 Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).

TUNNEL...1Q131 (LINE)

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4743 If feature type is linear, the label hierarchy is:
(1) Label shall be placed 1 mm above feature, centered.
(2) Top of label shall be placed 1 mm below feature, centered.
(3) Label may be displaced along the feature; use two labels if feature length 150 mm or greater.
(4) Do not label across shoreline (2A010 or 2H075).

R-2842 If feature road (1P030) is not required, or does not join with one of the following features, these features shall not be required:
Interchange (1P020)
Tunnel (1Q131)
If a road overprints any of the above features, break road symbol for other feature symbol.

AIR OBSTRUCTION LIGHT...1R005 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

R-3679 When an air obstruction light (1R005) overprints any other point feature, delete Posicut #4 from symbols 1R005P001 and 1R005P002.

NAVAIDS (AERONAUTICAL)...1R030 (POINT)

FEATURE: NAVAIDS (AERONAUTICAL)...1R030 (POINT)

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4782 If NST=002, label "Consol"
If NST=017, label "Aero RC"

CABLE...1T005 (LINE)

R-2211 Cables (1T005) shall be printed so the centerline (line from end to end) of the Posicut #56 follows the position of the linear feature cable. The linear symbol is created by adjacent and joined posicuts repeated for the length of the line. Abandoned cables (1T005, EXS=006) shall have one out of every four posicuts along the line deleted.

R-2212 The electric flash (Posicut #142) of power cables (1T005, USE=053) shall be printed at 50 mm interval along the line symbol. The line symbol shall be broken for 1 mm on each side of the electric flash.

R-2818 If Pipelines (1L160) or cables (1T005) in the water (LOC=010, 011, or 012) meet the following criteria, they are represented as pipeline areas (6C150, DTC=013) or cable areas (6C150, DTC=012) respectively, rather than shown as separate pipelines or cables. If Pipelines and cables together meet the following criteria, they are represented as "cables and pipelines area" (6C150, DTC=015).
Criteria:
a. more than two linear features, AND
b. space between any two linear features is less than 8 mm at chart scale, AND
c. space between the outermost linear features in the group is greater than 3 mm at chart scale

If more than two cables or pipelines are <= 3 mm apart at chart scale, show only the outermost linear features.

If cable symbols overprint other cable symbols, show one cable.
If pipeline symbols overprint other pipeline symbols, show one pipeline.
If cable symbols and pipeline symbols overprint, show a cable and pipeline area (6C150, DTC0=15).

The outermost limits of the cable, pipeline, or cables and pipeline area (6C150, DTC=012, 013, or 015) area feature are diplaced for 2 mm past the outermost cables and pipelines, so that the area within which anchoring, trawling, and dredging are prohibited or inadvisable includes a safety margin beyond the outermost cables and/or pipelines.

DISH...1T010 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-3805 If HGT is unknown, omit HGT label (including parentheses and overhead bar/ticks).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4737 Feature name /label shall be positioned parallel to lines of latitude and readable left to right.

FEATURE: DISH...1T010 (POINT)

O-3434 The minimum height requirement in the inclusion condition is ignored if: 1) the height (HGT) is unknown, or 2) the chart falls within an area defined as having sparse culture, or 3) no other landmark or navigational (area or point FACS Category 1 or Subcategory 2C) features are shown on the chart within 50 mm (at chart scale) of the feature.

T-0815 Omit feature within built-up area (1L020) if COC=002 (Not Conspicuous).

T-0856 A non-conspicuous feature (COC=002) is not required if it is obscured from seaward by intervening terrain.

POWER TRANSMISSION LINE...1T030 (LINE)

D-7012 Break line symbol in water area for overprinting point symbol with the same color. Leave space 0.5 mm on each side of the point symbol. Do not displace either the line symbol or the point symbol. Point symbols may overprint line symbols of a different color.

L-4775 If attribute SHC and /or SOC is unknown or cannot be determined, omit window and associated /bounding lines.

L-4804 The attribute SOC and the associated bars shall be positioned reading horizontal, in the following priority:
a. In the water, alongside the feature, without overprinting other hydrographic detail.
b. If necessary to avoid overprints, label may be placed on land, adjacent to the feature.

L-4818 The datum above which Safe Overhead Clearances (SOC) are given shall be a high water datum, preferably Mean High Water Springs (VDC=009) where the tide is appreciable. If the tide is not appreciable, i.e., less than 0.3 meter, Mean Sea Level (VDC=015) may be used. SOC shall be rounded down to the nearest whole meter, unless under 10 meters, where it is rounded down to the nearest meter and decimeter value.

R-2213 Minimum symbol length shall be one repitition of dot, two dashes, posicut, two dashes, and dot.

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2744 Navigable water in the context of the OWO attribute is any open water (2A040), or inland hydrographic feature river/stream (2H140), lake/pond (2H080), or canal (2H020) that is required for port access (RPA=001).

R-2755 If the feature does not cross over navigable water, i.e., it is OWO=002, then the SOC and SHC attributes are not applicable.

R-2877 Show feature only between the first pylon or pole on each bank.

RADAR TRANSMITTER/RADOME...1T045 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4864 If SSC=Dome, delete "RADAR" and SSC from legend and show "RADOME".

FEATURE: RADAR TRANSMITTER/RADOME...1T045 (POINT)

L-4883 If the attribute value that labels a symbol is "unknown" or "other", label the symbol with the FACS Feature name.

TELEPHONE LINE /TELEGRAPH LINE...1T060 (LINE)

D-7012 Break line symbol in water area for overprinting point symbol with the same color. Leave space 0.5 mm on each side of the point symbol. Do not displace either the line symbol or the point symbol. Point symbols may overprint line symbols of a different color.

L-4775 If attribute SHC and /or SOC is unknown or cannot be determined, omit window and associated /bounding lines.

L-4804 The attribute SOC and the associated bars shall be positioned reading horizontal, in the following priority:
a. In the water, alongside the feature, without overprinting other hydrographic detail.
b. If necessary to avoid overprints, label may be placed on land, adjacent to the feature.

L-4818 The datum above which Safe Overhead Clearances (SOC) are given shall be a high water datum, preferably Mean High Water Springs (VDC=009) where the tide is appreciable. If the tide is not appreciable, i.e., less than 0.3 meter, Mean Sea Level (VDC=015) may be used. SOC shall be rounded down to the nearest whole meter, unless under 10 meters, where it is rounded down to the nearest meter and decimeter value.

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2744 Navigable water in the context of the OWO attribute is any open water (2A040), or inland hydrographic feature river/stream (2H140), lake/pond (2H080), or canal (2H020) that is required for port access (RPA=001).

R-2755 If the feature does not cross over navigable water, i.e., it is OWO=002, then the SOC and SHC attributes are not applicable.

R-2877 Show feature only between the first pylon or pole on each bank.

TOWER (COMMUNICATION)...1T080 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

L-3805 If HGT is unknown, omit HGT label (including parentheses and overhead bar/ticks).

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4737 Feature name /label shall be positioned parallel to lines of latitude and readable left to right.

O-3431 If GUG=000 (Unknown), portray as GUG=002 (Unguyed).

O-3434 The minimum height requirement in the inclusion condition is ignored if: 1) the height (HGT) is unknown, or 2) the chart falls within an area defined as having sparse culture, or 3) no other landmark or navigational (area or point FACS Category 1 or Subcategory 2C) features are shown on the chart within 50 mm (at chart scale) of the feature.

FEATURE: TOWER (COMMUNICATION)...1T080 (POINT)

R-2746 If a feature is symbolized by one of the following posicuts, and that posicut overprints the shoreline (2A010, 2H075), or other point symbols when oriented vertical, replace the posicut and label as indicated below. Type is upper case 7 point, with Posicut #55, if COC=001 (Conspicuous), and type is upper and lower case, with Posicut #7, if COC=002 (Not Conspicuous), or COC is not used for that feature.

Feature	Posicut	Label
1F010	6	Chy
1F070	9	Flare
1J050	13	Windmill (if PRO=019)
1J050	211	Windmotor (if PRO=036)
1L050	39	Sign
1L073	221	FS
1L130	63	Mon
1L240	68	Tr
1M080	69	Water Tr
1Q110	45	Mooring Mast
1T080	61	R Mast (if GUG=001)
1T080	62	R Tr (if GUG=000 or 002)

T-0824 Thinning order with highest priority for retention (a):

(a) Towers associated with electronic navigational overprints (rates). NST=002, 003, 007 and 008 are required if their respective rate is overprinted; i.e., if LORAN rates are overprinted on the chart, then LORAN towers (1T080, NST=007) are required.

(b) When the same type of communications towers (1T080) overprint each other, retain in the following priority:

(1) COC=001

(2) NST=002, 003, 007 and 008, if no electronic rate overprint is shown on chart.

(3) COC=002

T-0857 A non-conspicuous feature (COC=002) is not required if it is obscured from seaward by intervening terrain, unless NST=002 (Consol), 003 (Decca), 007 (Loran), or 008 (Omega).

AIRCRAFT FACILITY...1U030 (AREA)

L-4704 Type size per area size at map /chart scale:

06 point - WID < 14 mm and LEN < 55 mm
08 point - WID >= 14 mm and < 28 mm; LEN >= 55 mm and < 82 mm
10 point - WID >= 28 mm and < 44 mm; LEN >= 82 mm and < 118 mm
12 point - WID >= 44 mm and < 62 mm; LEN >= 118 mm and < 158 mm
14 point - WID >= 62 mm and < 84 mm; LEN >= 158 mm and < 198 mm
16 point - WID >= 84 mm and < 104 mm; LEN >= 198 mm and < 240 m
18 point - WID >= 104 mm and LEN >= 240 mm

Where WID and LEN measurements are inconsistent, the larger type size shall be used.

L-4705 Labeling areas, in order of preference:

(1) Centered in area on one line in the area, type is horizontal, reading left to right.

(2) Centered in area on one line in the area, oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.

(3) Centered in area on two approximately equal lines, without splitting a word, type is horizontal, reading left to right.

(4) Centered on two approximately equal lines without splitting a word, type is oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.

(5) Use Rule L-4722 for type placement if the area is too small to place the type inside the area.

FEATURE: AIRCRAFT FACILITY...1U030 (AREA)

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4737 Feature name /label shall be positioned parallel to lines of latitude and readable left to right.

L-4816 If NAM is unknown, and runways (1U160) are not shown, label feature (1U030, AFT=001) "Airport" in upper/lower case type using Rule L-4705 for placement. If AFT=002 and NAM is unknown, label "Heliport"

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

T-0813 Delete the feature if it is inside a built-up area (1L020).

AIRCRAFT FACILITY...1U030 (POINT)

L-4816 If NAM is unknown, and runways (1U160) are not shown, label feature (1U030, AFT=001) "Airport" in upper/lower case type using Rule L-4705 for placement. If AFT=002 and NAM is unknown, label "Heliport"

T-0813 Delete the feature if it is inside a built-up area (1L020).

AIRCRAFT FACILITY BEACON...1U040 (POINT)

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

R-2849 Light flares (Posicut No. 94) shall be oriented in order as follows:
(1) So that it does not overprint on the feature or a legend associated with that feature (except for the 7.1 mm diameter circle representing a radio aid to navigation, which the flare may overprint).
(2) So it does not overprint other chart data (i.e., soundings, pipelines, submarine cables, etc.)
(3) So that the wide end of the flare is pointed toward the legend of the light, or to seaward along the line, in the case of clearing lines (2C020), and clearing lines (2C040).

RUNWAY...1U160 (AREA)

O-3412 If over half the length of the feature is <= 6,000 m from the shoreline, show all of the feature.

R-2880 If runways (1U160) overprint each other, break lines where overprinting occurs.

R-3697 Where a linear feature has a distance from shoreline (DFS) as its inclusion condition, and that linear feature does not fall completely within the area between the shoreline and the distance stated in the inclusion condition, show the feature continuously inland to distance equal to twice the DFS for that feature. At that point (twice the DFS) do not show any more of the feature until it once again meets twice the original DFS inclusion condition.

RUNWAY...1U160 (LINE)

R-2880 If runways (1U160) overprint each other, break lines where overprinting occurs.

FEATURE: RUNWAY...1U160 (LINE)

R-3697 Where a linear feature has a distance from shoreline (DFS) as its inclusion condition, and that linear feature does not fall completely within the area between the shoreline and the distance stated in the inclusion condition, show the feature continuously inland to distance equal to twice the DFS for that feature. At that point (twice the DFS) do not show any more of the feature until it once again meets twice the original DFS inclusion condition.

COASTAL SHORELINE...2A010 (LINE)

D-7010 Shoreline (2A010 and 2H075) shall be broken for 0.2mm on each side of the following graphic elements:
1U040 Aircraft Facility Beacon, Posicut #199
2C030 Electronic Beacon, Posicut #92
2C050 Light, Posicut #199
2C055 Marker, rectangle
2C060 Visual Beacon, Posicut #85
Shoreline is not broken for other posicuts or labels associated with these symbols. Instead, type shall be placed either in the water or on land, so that it does not cross the shoreline.

R-1200 Mean High Water (VDC=007) is the prefered vertical datum for shoreline portrayal. When Mean High Water is not available, the shoreline will be delineated by whatever means possible. There may never be a segment of missing shoreline (by definition, the line where a land mass is in contact with a body of open water.

R-2423 When coastal shorelines (2A010) associated with islands (4B135) coalesce at map scale, that portion of the shoreline which coalesces should be symbolized without vignette portion of the symbol, i.e., default shoreline symbol to shoreline with ACC=001 (Accurate) and SLT=015 (Other).

R-2737 If SLT (Shoreline Type) is 010 (Rocky), 011 (Rubble), 013 (Sandy), 014 (Stony-Shingly), the minimum length of the symbolized shoreline type shall be 50 mm at chart scale. Shorter shoreline type segments shall be shown as the predominant shoreline type for the area. Prominent breaks in rocky shoreline (SLT=010) shall be shown if longer than 10 mm at chart scale, otherwise they shall be shown as rocky shoreline. The breaks shal be symbolized as SLT=015 (Other), i.e., a regular shoreline.

R-2738 For products that portray the vegetation (Category 5) features mangrove (5C030, VEG=019), swamp (5D030), or marsh (5D040), shoreline type SLT=006 (Mangrove) shall be shown when adjacent to mangrove, and SLT=008 (Marsh, Swamp) shown when adjacent to a swamp or marsh. If those vegetation features are not shown on the product, the minimum length of SLT 006 and 008 shall be 20 mm at chart scale.

FORESHORE...2A020 (AREA)

L-4705 Labeling areas, in order of preference:
(1) Centered in area on one line in the area, type is horizontal, reading left to right.
(2) Centered in area on one line in the area, oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(3) Centered in area on two approximately equal lines, without splitting a word, type is horizontal, reading left to right.
(4) Centered on two approximately equal lines without splitting a word, type is oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(5) Use Rule L-4722 for type placement if the area is too small to place the type inside the area.

L-4706 If the attribute value is not known, or the attribute value for none or not applicable, delete window and condense remaining windows.

FEATURE: FORESHORE...2A020 (AREA)

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

R-2825 Delete dot portion of the symbol that is within 0.5 mm, at chart scale, of the shoreline (2A010 or 2H075).

R-2826 Features with the same code, separated by less than 2 mm at chart scale, shall be combined into one areal feature.

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

FORESHORE...2A020 (POINT)

L-4706 If the attribute value is not known, or the attribute value for none or not applicable, delete window and condense remaining windows.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

R-2825 Delete dot portion of the symbol that is within 0.5 mm, at chart scale, of the shoreline (2A010 or 2H075).

R-2911 When two or more identical symbols overprint each other, delete the portions that overlap and show as one symbol with an outline of the combined area of the symbols.

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

R-3709 The diameter of the circular symbol perimeter line may be reduced in congested areas to avoid overprinting other symbols, but must be at least 2.0 mm diameter, and cannot come closer than 0.2 mm to any type or graphic symbol shown inside the circle. In non-congested areas the normal symbol diameter shall be shown.

OPEN WATER (EXCEPT INLAND)...2A040 (AREA)

O-3407 An inset plan covering an area within a chart is screened to the same depth curve as that used on the chart, regardless of the scale of the plan.

FEATURE: OPEN WATER (EXCEPT INLAND)...2A040 (AREA)

O-3435 The depth curve (2E010) to which a blue water tint is shown is established by a representation rule. If for some reason this specified depth curve is not the curve most significant for navigation in the area, the cartographer shall select the depth curve most significant for navigation, and use that depth curve for blue water tint portrayal.

In some instances, it may be desirable to show two water tints, for example, a Blue 31% tint from the shoreline to the 20 meter depth curve, and a Blue 12% tint from the 20 meter depth curve to the 30 meter depth curve. In this case, a SPC-48253 Blue 31% 45° angle screen is used for the darker tint, and a SPC-48253 Blue 12% 75° angle screen is used for the lighter tint.

When using open window negatives for printing, extending the 12% Blue open window from the second significant depth curve all the way to the shoreline, rather than just to the darker blue tint, will eliminate the potential for a white halo where the two blue screens meet, if registration is not exact.

R-2869 Show water tint (Blue SPC-48253, 31% screen, at 45°) from the shoreline (2A010 or 2H075), to the 10 meter depth curve (2E010, CRV=010) and all offshore areas shallower than 10 meters (inside a 10 meter depth curve). Blue tint is deleted from inland hydrographic features (2H), in those areas that are deeper than 10 meters (outside the 10 meter depth curve).

R-2871 Charts in areas recognized as likely routes for supertankers (draft of 18 - 28 meters) shall show water tint from the shoreline (2A010 or 2H075) to the 30 meter depth curve (2E010, CRV=030) and all offshore areas inside the 30 meter depth curve. Shipping routes for supertankers are indicated in the IMO Publication Ship`s Routeing Manual - Part C "Deep Water Routes", and DMA Sailing Directions.
To further emphasize dangers existing for ships with drafts up to 30 meters, depths of less than 30 meters seaward of the 30 meters depth curve shall carry a blue screen, e.g., single sounding or several soundings in an area. Areas deeper than 30 meters shall not show blue tint.

ANCHORAGE...2B010 (AREA)

L-4705 Labeling areas, in order of preference:
(1) Centered in area on one line in the area, type is horizontal, reading left to right.
(2) Centered in area on one line in the area, oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(3) Centered in area on two approximately equal lines, without splitting a word, type is horizontal, reading left to right.
(4) Centered on two approximately equal lines without splitting a word, type is oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(5) Use Rule L-4722 for type placement if the area is too small to place the type inside the area.

L-4715 Type sizes for Maritime Limits and areas:
8 point - < 8 sq. cm.
10 point - >= 8 and < 12 sq. cm.
12 point - >= 12 and < 24 sq. cm.
14 point - >= 24 and < 100 sq. cm.
8 point - >= 100 sq. cm.

Type placement for areas >= 100 sq. cm. to < 500 sq. cm.
Two labels are shown on approximately opposite sides of the area, preferably top and bottom.

Type placement for areas >= 500 sq. cm.
Labels are placed at approximately 250 mm. interval around the perimeter of the feature.

Do not place labels around sharp corners (interior angle <135°), or along chart neatlines. Place type 1 mm away and parallel to area limit line, reading left to right, or bottom to top if limit line is vertical. Type is placed on the INSIDE of the area.

FEATURE: ANCHORAGE...2B010 (AREA)

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4753 Type placement for areas < 100 sq. cm. Type shall be centered in area reading from left to right.

If longer of two axes is North-South +/- 20 degrees or East-West +/- 20 degrees, type is parallel to south neatline.
(a) If LEN < WID times two, type shall be placed on two approximately equal lines without splitting words.
(b) If LEN >= WID times two, and major axis is East-West +/- 20 degrees, type shall be placed on one line.
(c) If LEN >= WID times two, and major axis is North-South +/- 20 degrees, type shall be placed with each word on a separate line.
If longer of two axes is more than 20 degrees from either North-South or East-West, and LEN < WID times two, type shall be parallel to south neatline and on two approximately equal lines without splitting words
If longer of two axes is more than 20 degrees from either North-South or East-West, and LEN >= WID times two, type shall be placed parallel to the major axis on one line.e to be placed inside area, place type outside area, using Rule L-4722.

L-4813 Descriptive terms, e.g., "Canal" shall be shown if the name is not known. If the descriptive word appears in the name, for example, "PANAMA CANAL", the descriptive type shall not be shown, i.e., do not show "Panama Canal Canal".

L-4869 *The name (NAM) of an anchoring berth (2B010, ANC=001) shall be centered in* the circle of Posicut # 78.

L-4882 If ANC=013 (General), no ANC label is shown; Otherwise, label ANC using the *following labels:*
If ANC=002, label "Explosives"
If ANC=008, label "Reserved"
If ANC=009, label "Seaplane"
If ANC=012, label "DW"
If ANC=014, label "Tanker"

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

R-2811 If NAM type will not fit inside anchoring berth circle (ANC=001), a rectangle or leader line may be used instead. Leader line is 0.1mm lineweight, Black solid, SPC-58600.

ANCHORAGE...2B010 (POINT)

L-4869 The name (NAM) of an anchoring berth (2B010, ANC=001) shall be centered in the circle of Posicut # 78.

R-2811 If NAM type will not fit inside anchoring berth circle (ANC=001), a rectangle or leader line may be used instead. Leader line is 0.1mm lineweight, Black solid, SPC-58600.

BREAKWATER...2B040 (AREA)

L-4725 *If VRC=004 (Below Surface) or 008 (Covers and Uncovers), add a label* "Breakwater" Type shall be 6 point Swiss 742 Upper/lower case italic. If feature LEN <= 13 mm at chart scale, abbreviate Breakwater as "Bkw" Type placement for Breakwater or Bkw shall be in water, parallel to the feature, *readable from left to right or from bottom to top.*

FEATURE: BREAKWATER...2B040 (AREA)

R-2741 A breakwater (2B040) is generally not intended for berthing, even on the sheltered side. A "mole" is a term used to describe a breakwater alongside which vessels may lie on the sheltered side only. In this case, it should be shown as a wharf (2B190) for the side that is used for berthing, and as a breakwater on the unsheltered side. In some cases, a mole may lie entirely within an artificial harbor, permitting vessels to lie along both sides. In this case, it should be shown as an offshore loading facility (2B170).

R-2802 Where symbols with the same feature code but different values of VRC are adjacent to each other, the boundary of the feature that is the highest in the vertical plane shall be shown, and the boundary of the feature that is lower shall be deleted. For example, the feature above water is shown whole, while the feature that covers and uncovers has that portion of its symbol perimeter that overprints the higher feature deleted

R-2803 When the area symbol boundary overprints the shoreline, and if VRC is applicable, and the VRC attribute value is 001 (Above High Water), the coincident feature boundary and coincident shoreline are deleted, and land tint extends to fill the feature.

R-3672 Show land tint inside the symbol. If attribute VRC is present, show land tint only if VRC=001 (Above surface/does not cover at High Water).

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

BREAKWATER...2B040 (LINE)

L-4725 If VRC=004 (Below Surface) or 008 (Covers and Uncovers), add a label "Breakwater" Type shall be 6 point Swiss 742 Upper/lower case italic. If feature LEN <= 13 mm at chart scale, abbreviate Breakwater as "Bkw" Type placement for Breakwater or Bkw shall be in water, parallel to the feature, readable from left to right or from bottom to top.

L-4743 If feature type is linear, the label hierarchy is:
(1) Label shall be placed 1 mm above feature, centered.
(2) Top of label shall be placed 1 mm below feature, centered.
(3) Label may be displaced along the feature; use two labels if feature length 150 mm or greater.
(4) Do not label across shoreline (2A010 or 2H075).

R-2741 A breakwater (2B040) is generally not intended for berthing, even on the sheltered side. A "mole" is a term used to describe a breakwater alongside which vessels may lie on the sheltered side only. In this case, it should be shown as a wharf (2B190) for the side that is used for berthing, and as a breakwater on the unsheltered side. In some cases, a mole may lie entirely within an artificial harbor, permitting vessels to lie along both sides. In this case, it should be shown as an offshore loading facility (2B170).

CALLING-IN POINT...2B050 (POINT)

D-1907 Point features, or individual posicuts of an area symbol, may be displaced <= 5 mm, at chart scale, to avoid overprints.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4724 Alphanumeric type shall be CAPS.

L-4870 NAM label shall be centered in the circle.

FISHING HARBOR...2B105 (POINT)

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JETTY...2B140 (LINE)

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OFFSHORE LOADING FACILITY...2B170 (AREA)

FEATURE: OFFSHORE LOADING FACILITY...2B170 (AREA)

L-4705 Labeling areas, in order of preference:
(1) Centered in area on one line in the area, type is horizontal, reading left to right.
(2) Centered in area on one line in the area, oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(3) Centered in area on two approximately equal lines, without splitting a word, type is horizontal, reading left to right.
(4) Centered on two approximately equal lines without splitting a word, type is oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(5) Use Rule L-4722 for type placement if the area is too small to place the type inside the area.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

R-9035 Show land tint inside the symbol.

OFFSHORE LOADING FACILITY...2B170 (LINE)

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4860 Place type above symbol with a minimum distance of 1 mm, to a maximum of 4 mm from the symbol, to avoid overprinting other chart data. If overprinting occurs, place type below symbol, with a minimum distance of 1 mm, to a maximum distance of 4 mm from the symbol, to avoid overprinting other data.

R-9035 Show land tint inside the symbol.

OFFSHORE LOADING FACILITY...2B170 (POINT)

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

R-2849 Light flares (Posicut No. 94) shall be oriented in order as follows:
(1) So that it does not overprint on the feature or a legend associated with that feature (except for the 7.1 mm diameter circle representing a radio aid to navigation, which the flare may overprint).
(2) So it does not overprint other chart data (i.e., soundings, pipelines, submarine cables, etc.)
(3) So that the wide end of the flare is pointed toward the legend of the light, or to seaward along the line, in the case of clearing lines (2C020), and clearing lines (2C040).

OYSTER OR CULTIVATED SHELLFISH BED...2B180 (AREA)

FEATURE: OYSTER OR CULTIVATED SHELLFISH BED...2B180 (AREA)

L-4705 Labeling areas, in order of preference:
(1) Centered in area on one line in the area, type is horizontal, reading left to right.
(2) Centered in area on one line in the area, oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(3) Centered in area on two approximately equal lines, without splitting a word, type is horizontal, reading left to right.
(4) Centered on two approximately equal lines without splitting a word, type is oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(5) Use Rule L-4722 for type placement if the area is too small to place the type inside the area.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

OYSTER OR CULTIVATED SHELLFISH BED...2B180 (POINT)

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PIER, WHARF...2B190 (AREA)

R-2804 When an area symbol or cased line symbol overprints the shoreline, shoreline is deleted.

R-9035 Show land tint inside the symbol.

PIER, WHARF...2B190 (LINE)

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SEAWALL...2B230 (LINE)

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BUOY...2C010 (POINT)

D-1914 If an IALA cardinal buoy must be displaced off of a 2D point hydrographic danger, it shall be displaced the minimum distance required to resolve the overprint of the central danger symbol (excluding danger circle and type), in the safe direction of the IALA cardinal buoy. The following are IALA cardinal buoys:

If SSC=080 or 083, and CCF=019, and TMC=008, buoy is IALA North Cardinal, displace north.
If SSC=080 or 083, and CCF=020, and TMC=009, buoy is IALA East Cardina, displace east.
If SSC=080 or 083, and CCF=013, and TMC=010, buoy is IALA South Cardinal, displace south.
If SSC=080 or 083, and CCF=014, and TMC=011, buoy is IALA West Cardinal, displace west.

FEATURE: BUOY...2C010 (POINT)

D-7013 When aids to navigation (2C) overprint hydrographic dangers (2D), or depth curves (2E010), the following displacement criteria applies:
a. If the aid to navigation is a fixed aid (2C030 Electronic Beacon, 2C050 Light, or 2C060 Visual Beacon), and the 2D symbol is a point symbol, delete the 2D point symbol. Show both if the 2D symbol is an area symbol.
b. If the aid to navigation is a buoy (2C010), the 2D symbol's danger curve, i.e., the dotted perimeter line, if present, is broken for the buoy symbol (excluding type).
c. If a point danger symbol contains a central graphic element, such as a + or posicut 104, 110, 114, etc., the buoy symbol is displaced off the danger symbol's centeral graphic element. The displacement shall be as little as possible to resolve the overprint. (For IALA cardinal buoys, see rule D-1914.)
d. The above criteria refers to the graphic portion of symbols only. All type and labels are movable around the graphic elements to avoid overprints. If the 2D symbol's central HDP type must be moved, it shall be placed outside the danger circle, and enclosed in parentheses.
e. Depth Curves (2E010) are broken for aids to navigation and dangers, and the type associated with these symbols.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4711 Strings of windows may be placed on two lines to avoid overprints.

L-4737 Feature name /label shall be positioned parallel to lines of latitude and readable left to right.

L-4759 Yellow, abbreviated "Y", shall be substituted for Orange "Or" or Amber "Am" when describing light color in the Character of Light attribute (COL).

L-4761 If the only light color is white, omit color from COL. e.g., "F1 6s 12 m 8M" is a white light.

L-4766 The name (NAM) of a buoy (2C010) shall be shown in quotes (i.e., "Heron").

L-4767 The period (PER) label of a buoy (2C010) may be omitted if that buoy is shown on a chart at a larger scale.

L-4768 If SST=000 for feature, display the sound signal posicut (No. 59) without the SST label. If SST=001 to 008, show the SST label and do not show the sound signal posicut.

L-4789 In areas of congested type, if it is necessary to abridge a light legend due to clutter, the period (PER) may be omitted.

L-4790 A posicut shall be displayed in the TMC window for each value of TMC. If TMC = 99 (None) the TMC window shall be deleted. The lower end of the topmark posicut shall touch the feature and shall be aligned with the primary axis of the feature.

L-4831 If CCF=000 (Unknown), delete window.

L-4833 If TMC=000 (Unknown) or 099 (None), delete window.

FEATURE: BUOY...2C010 (POINT)

L-4834 If TMC = 001 to 027, place the appropriate topmark symbol in the TMC window, with the lower end of the posicut touching the feature. Use the appropriate posicut for each value of TMC as follows:

001 Can (Open), use Posicut #169
002 Cone, Point Up (Open), use Posicut #170
003 Can (Filled), use Posicut #171
004 Cone, Point Up (Filled), use Posicut #172
005 "X" , use Posicut #173
006 Ball (Open), use Posicut #174
007 Double Ball (Filled), use Posicut #175
008 Double Cone, Points Upward (Filled), use Posicut #176
009 Double Cone, Points Apart (Filled), use Posicut #177
010 Double Cone, Points Downward (Filled), use Posicut #178
011 Double Cone, Points Together (Filled), use Posicut #179
012 Diamond (Open), use Posicut #180
013 Diamond (Filled), use Posicut #181
014 Cone, Point Up, Over Ball (Open), use Posicut #182
015 Cone, Point Up, Over Ball (Filled), use Posicut #183
016 Ball Over Cone, Point Up (Open), use Posicut #184
017 Ball Over Cone, Point Up (Filled), use Posicut #185
018 Cross, use Posicut #186
019 Ball (Filled), use Posicut #187
020 Broom, use Posicut #188
021 "T", use Posicut #189
022 Can Over Ball (Open), use Posicut #190
023 Cross Over Ball (Open), use Posicut #191
024 Diamond Over Ball (Filled), use Posicut #192
025 Double Ball (Open), use Posicut #193
026 Cone, Point Downward (Open), use Posicut #194
027 Double Cone, Points Apart (Open), use Posicut #195

L-4835 If RA1=000 (Unknown) or 050 (None). do not show RA1 label, and do not show Posicut #86 (7.1 mm diameter purple circle).

L-4836 If RA2=000 (Unknown) or 050 (None), do not show RA2 label.

L-4837 If SST=000 (Unknown), delete window, but show Posicut #59 (three concentric arcs - fog signal posicut).

L-4838 If SST=016 (None) delete window and do not show Posicut #59 (three concentric arcs - fog signal posicut).

L-4839 If SST is not 000 (Unknown) or 016 (None), label SST with appropriate legend and do not show posicut #59 (three concentric arcs - fog signal posicut).

If SST is: Use legend:
001 Bell
002 Whis
003 Horn
004 Gong
005 Dia
006 Siren
007 Reed
008 Explos

L-4840 If RA1=005 (Directional Radiobeacon), 014 (Rotating Radiobeacon), 017 (Circular Radiobeacon), 048 (Aeronautical Radiobeacon, Non-directional), or 049 (Radiobeacon, Type Unknown), and BF1 is not 000 (Unknown), and BF1 < 285 or BF1 > 325; delete RA1 window and do not show Posicut #86 (7.1 mm diameter purple circle).

L-4841 If RA2=005 (Directional Radiobeacon), 014 (Rotating Radiobeacon), 017 (Circular Radiobeacon), 048 (Aeronautical Radiobeacon, Non-directional), or 049 (Radiobeacon, Type Unknown), and BF2 is not 000 (Unknown), and BF2 < 285 or BF2 > 385, delete RA2 window.

L-4842 If PER=000 (Unknown) or 999 (None), delete window and close up any windows previously separated by the PER window (if any).

FEATURE: BUOY...2C010 (POINT)

L-4843 If RA1 does not equal an attribute listed for a particular symbol, omit Posicut #86 (7.1 mm diameter purple circle) and the RA1 label.

L-4844 If RA2 does not equal an attribute listed for a particular symbol, omit the RA2 label.

L-4845 If PER < 3 seconds, round it to the nearest half second and display in whole number and fraction format (e.g., 2.3 seconds = 2 1/2s, 2.6 seconds = 2 1/2s, 2.8 seconds = 3s). If PER >= 3 seconds round to whole seconds.

L-4846 If CHA=023 (Unlighted), delete COL, PER, EOL, and LVR windows, and delete Posicut #94 (Light flare posicut).

L-4849 Abbreviations for colors for the CCF label, and other specified color legends:

If CCF is:
001 Red, abbreviate "R"
002 Red & White, abbreviate "RW"
003 Red & Green, abbreviate "RG "
004 Red & Black, abbreviate "RB"
005 Red-Green-Red, abbreviate "RGR"
006 Green, abbreviate "G"
007 Green & White, abbreviate "GW"
008 Green & Red, abbreviate "GR"
009 Green & Black, abbreviate "GB"
010 Green-Red-Green, abbreviate "GRG"
011 Green-Yellow-Black, abbreviate "GYB"
012 Yellow, abbreviate "Y"
013 Yellow & Black, abbreviate "YB"
014 Yellow-Black-Yellow, abbreviate "YBY"
015 Yellow & Red, abbreviate "YR"
016 Yellow & Green, abbreviate "YG"
017 Yellow-Red-White, abbreviate "YRW"
018 Black, abbreviate "B"
019 Black & Yellow, abbreviate "BY"
020 Black-Yellow-Black, abbreviate "BYB"
021 Black-Red-Black, abbreviate "BRB"
022 Black & White, abbreviate "BW"
023 Black & Red, abbreviate "BR"
024 Black & Green, abbreviate "BG"
025 White, abbreviate "W"
026 White & Red, abbreviate "WR"
027 White & Orange, abbreviate "W Or"
028 White & Green , abbreviate "WG"
029 White & Black, abbreviate "WB"
030 White & Yellow, abbreviate "WY"
031 White-Red-Green, abbreviate "WRG"
032 White-Green-White, abbreviate "WGW"
033 Orange, abbreviate "Or"
034 Blue, abbreviate "Bu "
035 Gray, abbreviate "Gy"
036 Violet, abbreviate "Vi"
037 Brown, abbreviate "Br"

L-4850 Abbreviations and labels for RA1 and RA2:

If RA1 or RA2 is:
004 Radio Direction Finding Station, abbreviate "RG"
005 Directional Radiobeacon, abbreviate "RD"
010 Racon, label "Racon"
014 Rotating Radiobeacon, abbreviate "RW"
017 Circular Radiobeacon, abbreviate "RC"
045 QTG Station, abbreviate "R"
046 Coast Radar Station, abbreviate "Ra"
047 Ramark, label "Ramark"
048 Aeronautical Radiobeacon, Non-directional, abbreviate "Aero RC"
049 Radiobeacon, Type Unknown, abbreviate "R Bn"
051 Consol, label "Consol"

FEATURE: BUOY...2C010 (POINT)

L-4853 If there is only one radio aid at a feature, it shall take its value from the RA1 attribute and RA2 shall have the value 050 (None).

L-4856 If PER is not 000 (Unknown) or 998 (None), the numerical value for PER shall be immediately followed by a lower case letter "s" printed in the same type as PER (i.e., 12s). When PER is not shown, do not show the "s".

L-4857 When EOL has a known value, and it is not zero (0), the numerical value for EOL shall be immediately followed by a lower case letter "m" printed in the same type as EOL (i.e., 25 m). When EOL is not shown, do not show the "m".

L-4858 When LVR or has a known value and it is not zero (0), the numerical value for LVR shall be immediately followed by a capital letter "M" printed in the same type as LVR (i.e., 10 M). When no light range is shown, do not show the "M".

L-4868 The CCF label for symbols 2C010P001, 2C010P013, 2C050P002, and 2C060P001 shall be centered immediately below the small circle marking the position of the feature.

L-4875 If there is more than one visibility range at a light, the attribute MLR is used in place of LVR attribute.

L-4876 The MLR label (i.e., 21-15 or 12/15) shall be shown in place of the LVR label on the symbology if there is more than one visibility at a light.

L-4899 Miscellaneous labels occasionally may be found in association with marine navigational aids (2C). If a text label is shown on hydrographic source material, it should be considered significant for navigation. Examples are:
-A fog detection light, label "Fog Det Lt"
-A floodlit structure near navigable water, label "(Illiminated)"
-A daytime light, if character (COL) of light in the day is different from the character shown at night. Show daytime character, followed by "Day" in parentheses, for example:
(F 37m 11M Day)
-Unwatched light, with no standby or emergency arrangements, label "(U)"
-A temporary light or buoy, label "(temp)". If seasonal, include months, for example: "(Apr-Oct)"
-A fog light, if light is only shown in fog, or the light during fog is different from the character (COL) shown at other times, show character in fog, followed by "(in fog)", in parentheses. For example: Fl 5s (in fog)
-A privately maintained light or buoy, label "(priv)"
-RACONs occasionally will show a morse code identification, or an operating frequency, for example, "Racon (Z)", "Racon (Z) (10 cm)", "Racon (Z) (3 & 10 cm)" A RACON responding on a fixed frequency outside the marine band is labeled with an "F" in front of the label "RACON"

R-2295 If a radio aids circle (Posicut #86) is shown on a symbol, it shall be centered on the origin of the symbol. Since they are a different color, TMC topmark posicuts may overprint the radio aid circle. The radar reflector (Posicut #93), if shown, shall be positioned outside the radio aids circle, preferably near the top of the symbol. The fog signal (Posicut #59), if shown, shall preferably be positioned concentric with the radio aids circle, with its middle arc even with the radio aids circle, which may be broken for 0.2 mm on both sides of the fog signal posicut. The fog signal posicut may be shown in any direction from the navigational aid, to avoid overprints, or moved completely outside the radio aids circle, if necessary.

R-2717 If SSC=080 (Pillar Buoy-Open), 083 (Spar Buoy), 084 (Can Buoy-Open), or 097 (Diamond Shaped Buoy), and CCF=001 (Red) or 005 (Red-Green-Red), and TMC=000 (Unknown), 099 (None) or 001 (Can-Open), and REF=001 (Radar Reflector Present), do not show Posicut #93 (Radar Reflector).

R-2718 If SSC=081 (Pillar Buoy-Filled), 083 (Spar Buoy), 087 (Cone Buoy-Filled), or 097 (Diamond Shaped Buoy), and CCF=006 (Green) or 010 (Green-Red-Green), and TMC=000 (Unknown), 099 (None), or 004 (Cone-Filled), and REF=001 (Radar Reflector Present), do not show Posicut #93 (Radar Reflector).

FEATURE: BUOY...2C010 (POINT)

R-2719 If SSC=080 (Pillar Buoy-Open), 083 (Spar Buoy), 084 (Can Buoy-Open), or 097 (Diamond Shaped Buoy), and CCF=006 (Green) or 010 (Green-Red-Green), and TMC=000 (Unknown), 099 (None), or 003 (Can-Filled) and REF=001 (Radar Reflector Present), do not show Posicut #93 (Radar Reflector).

R-2720 If SSC=081 (Pillar Buoy-Filled), 083 (Spar Buoy), 087 (Cone Buoy-Filled), or 097 (Diamond Shaped Buoy), and CCF=001 (Red) or 005 (Red-Green-Red), and TMC=000 (Unknown), 099 (None), or 002 (Cone-Open) and REF=001 (Radar Reflector Present), do not show Posicut #93 (Radar Reflector).

R-2721 If SSC=080 (Pillar Buoy-Open) or 083 (Spar Buoy), and CCF=019 (Black and Yellow), and TMC=008 (Double Cones, Point Upward-Filled), and REF=001 (Radar Reflector Present), do not show Posicut #93 (Radar Reflector).

R-2722 If SSC=080 (Pillar Buoy-Open) or 083 (Spar Buoy), and CCF=020 (Black-Yellow-Black), and TMC=009 (Double Cones, Points Apart-Filled), and REF=001 (Radar Reflector Present), do not show Posicut #93 (Radar Reflector).

R-2723 If SSC=080 (Pillar Buoy-Open) or 083 (Spar Buoy), and CCF=013 (Tellow and Black) and TMC=010 (Double Cones, Points Downward-Filled), and REF=001 (Radar Reflector Present), do not show Posicut #93 (Radar Reflector).

R-2724 If SSC=080 (Pillar Buoy-Open) or 083 (Spar Buoy), and CCF=014 (Yellow-Black-Yellow), and TMC=011 (Double Cones, Points Together-Filled), and REF=001 (Radar Reflector Present), do not show Posicut #93 (Radar Reflector).

R-2725 If SSC=080 (Pillar Buoy-Open) or 083 (Spar Buoy), and CCF=021 (Black-Red-Black), and TMC=007 (Double Ball-Filled), and REF=001 (Radar Reflector Present), do not show Posicut #93 (Radar Reflector).

R-2726 If SSC=080 (Pillar Buoy-Open), 083 (Spar Buoy), or 088 (Spherical Buoy-Vertical Stripes), and CCF=002 (Red & White), and TMC=007 (Double Ball-Filled), and REF=001 (Radar Reflector Present), do not show Posicut #93 (Radar Reflector).

R-2727 If SSC=080 (Pillar Buoy-Open) or 083 (Spar Buoy), and CCF=012 (Yellow), and TMC=005 ("X"), and REF=001 (Radar Reflector Present), do not show Posicut #93 (Radar Reflector).

R-2832 EOL of feature shall be shown to the nearest whole meter rounded to the next higher value at .5 meter, e.g., 10.4 = 10, whereas 10.5 = 11.

R-2849 Light flares (Posicut No. 94) shall be oriented in order as follows:
(1) So that it does not overprint on the feature or a legend associated with that feature (except for the 7.1 mm diameter circle representing a radio aid to navigation, which the flare may overprint).
(2) So it does not overprint other chart data (i.e., soundings, pipelines, submarine cables, etc.)
(3) So that the wide end of the flare is pointed toward the legend of the light, or to seaward along the line, in the case of clearing lines (2C020), and clearing lines (2C040).

R-2884 The point of the light flare (Posicut No. 94) shall be 1 mm from the dot or small circle representing the position of the feature.

R-2885 Seasonal buoys shall be shown without mention of their seasonal nature.

R-2886 The slope of a buoy (2C010), which is normally 25° from vertical, may be varied from 5° to 45° from vertical to avoid overprints.

R-2887 Reserve fog signals shall not be shown on product.

R-2992 If REF=002 (Radar Reflector Absent), do not shown Posicut #93 (Radar Reflector posicut).

R-2994 IF SSC=000 (Unknown), 079 (Other), or 097 (Diamond Shaped), and CCF=000, 001, 003-005, 012-017, or 025-037, use Posicut #150 (Pillar Buoy (Open]).

R-2995 If SSC=000 (Unknown), 079 (Other), or 097 (Diamond Shaped), and CCF=006-011, or 018-024, use Posicut #151 (Pillar Buoy [Filled]).

FEATURE: BUOY...2C010 (POINT)

R-2996 If SSC=000 (Unknown), 079 (Other), or 097 (Diamond Shaped), and CCF=002, use Posicut #152 (Pillar Buoy [Vertical Stripes]).

R-2997 If SSC is: Use Posicut:
080 Pillar Buoy (Open), use Posicut #150
081 Pillar Buoy (Filled), use Posicut #151
082 Pillar Buoy (Vertical Stripes), use Posicut #152
083 Spar Buoy, use Posicut #153
084 Can Buoy (Open), use Posicut #154
085 Can Buoy (Filled), use Posicut #155
086 Cone Buoy (Open), use Posicut #156
087 Cone Buoy (Filled), use Posicut #157
088 Spherical Buoy (Vertical Stripes), use Posicut #158
089 Spherical Buoy, use Posicut #159
090 Superbuoy (ODAS), use Posicut #160
091 Superbuoy (LANBY), use Posicut #162
092 Superbuoy (Tanker), use Posicut #161
093 Lightship , use Posicut #162
094 Lightfloat (Open), use Posicut #163
095 Barrel/Tonne Buoy, use Posicut #164
096 Mooring Buoy, use Posicut #165
097 Diamond Shaped Buoy, use Posicut # 167
102 Lightfloat (Filled), use Posicut #219

R-3684 If a mooring buoy (2C010, SSC=096) is unlighted (CHA=023), omit light flare (Posicut #94) from the symbol.

S-1403 If a channel is marked by a feature but because of the product scale individual features overprint or are closer than 3 mm, replace the features with the legend "Buoyed channel" (for 2C010) or "Channel marked by beacons" (for 2C060). Legend will be aligned with the channel.

T-0845 If superbuoys (2C010, SSC=090 (Superbuoy-ODAS), 091 (Superbuoy-LANBY), 092 (Superbuoy-Tanker), 093 (Lightship), 094 (Lightfloat-Open), or 102 (Lightfloat-Filled)) overprint other buoys (2C010 with other SSC values), thin by first deleting buoys other than those with SSC values of 090 throught 094, or 102).

T-0846 First thin buoys (2C010) with the same color (CCF), then those with the same shape (SSC).

CLEARING LINE...2C020 (LINE)

D-7012 Break line symbol in water area for overprinting point symbol with the same color. Leave space 0.5 mm on each side of the point symbol. Do not displace either the line symbol or the point symbol. Point symbols may overprint line symbols of a different color.

L-4743 If feature type is linear, the label hierarchy is:
(1) Label shall be placed 1 mm above feature, centered.
(2) Top of label shall be placed 1 mm below feature, centered.
(3) Label may be displaced along the feature; use two labels if feature length 150 mm or greater.
(4) Do not label across shoreline (2A010 or 2H075).

L-4830 When a clearing line (2C020) is used to define the limits of a measured distance line (6C100), delete all text associated with the clearing line.

L-4881 Marks should be briefly described using the COL or DRP attributes, if there is any doubt concerning their identity on the chart:
a. If space is minimal, the entire legend may be deleted.
b. Show BRG only, if the identity of the marks is clear.
c. Features may be named if desirable to identify the marks, for example, a COL of "2 Lts" or a DRP of "2 Bns" or "TR & Bn"
d. Exceptionally, the character of a light is given to avoid confusion with other nearby lights, for example a COL of "2 Fl R"

L-7010 The first letter in the symbol label, and any abbreviation of lights or beacons (Lt, Lts, Bn, Bn), are capitalized. Other letters are lower case

FEATURE: CLEARING LINE...2C020 (LINE)

O-3420 If a clearing line (2C020) or leading line (2C040) is shown, show the feature(s) associated with it (usually light 2C050, or visual beacon 2C060). If the feature(s) are not required by the product, show as Miscellaneous Cultural Feature (9D012).

R-2999 The length of a clearing line (2C020) shall be determined by the geographic positions of its ends.

ELECTRONIC BEACON...2C030 (POINT)

D-7013 When aids to navigation (2C) overprint hydrographic dangers (2D), or depth curves (2E010), the following displacement criteria applies:
a. If the aid to navigation is a fixed aid (2C030 Electronic Beacon, 2C050 Light, or 2C060 Visual Beacon), and the 2D symbol is a point symbol, delete the 2D point symbol. Show both if the 2D symbol is an area symbol.
b. If the aid to navigation is a buoy (2C010), the 2D symbol's danger curve, i.e., the dotted perimeter line, if present, is broken for the buoy symbol (excluding type).
c. If a point danger symbol contains a central graphic element, such as a + or posicut 104, 110, 114, etc., the buoy symbol is displaced off the danger symbol's centeral graphic element. The displacement shall be as little as possible to resolve the overprint. (For IALA cardinal buoys, see rule D-1914.)
d. The above criteria refers to the graphic portion of symbols only. All type and labels are movable around the graphic elements to avoid overprints. If the 2D symbol's central HDP type must be moved, it shall be placed outside the danger circle, and enclosed in parentheses.
e. Depth Curves (2E010) are broken for aids to navigation and dangers, and the type associated with these symbols.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4737 Feature name /label shall be positioned parallel to lines of latitude and readable left to right.

L-4783 Label placement hierarchy:
(1) On land, one line,
(2) On land, two lines, word spellings not split.
(3) In water, one line.

L-4835 If RA1=000 (Unknown) or 050 (None). do not show RA1 label, and do not show Posicut #86 (7.1 mm diameter purple circle).

L-4836 If RA2=000 (Unknown) or 050 (None), do not show RA2 label.

L-4844 If RA2 does not equal an attribute listed for a particular symbol, omit the RA2 label.

L-4850 Abbreviations and labels for RA1 and RA2:

If RA1 or RA2 is:
004 Radio Direction Finding Station, abbreviate "RG"
005 Directional Radiobeacon, abbreviate "RD"
010 Racon, label "Racon"
014 Rotating Radiobeacon, abbreviate "RW"
017 Circular Radiobeacon, abbreviate "RC"
045 QTG Station, abbreviate "R"
046 Coast Radar Station, abbreviate "Ra"
047 Ramark, label "Ramark"
048 Aeronautical Radiobeacon, Non-directional, abbreviate "Aero RC"
049 Radiobeacon, Type Unknown, abbreviate "R Bn"
051 Consol, label "Consol"

L-4853 If there is only one radio aid at a feature, it shall take its value from the RA1 attribute and RA2 shall have the value 050 (None).

FEATURE: ELECTRONIC BEACON...2C030 (POINT)

L-4899 Miscellaneous labels occasionally may be found in association with marine navigational aids (2C). If a text label is shown on hydrographic source material, it should be considered significant for navigation. Examples are:
-A fog detection light, label "Fog Det Lt"
-A floodlit structure near navigable water, label "(Illiminated)"
-A daytime light, if character (COL) of light in the day is different from the character shown at night. Show daytime character, followed by "Day" in parentheses, for example:
(F 37m 11M Day)
-Unwatched light, with no standby or emergency arrangements, label "(U)"
-A temporary light or buoy, label "(temp)". If seasonal, include months, for example: "(Apr-Oct)"
-A fog light, if light is only shown in fog, or the light during fog is different from the character (COL) shown at other times, show character in fog, followed by "(in fog)", in parentheses. For example: Fl 5s (in fog)
-A privately maintained light or buoy, label "(priv)"
-RACONs occasionally will show a morse code identification, or an operating frequency, for example, "Racon (Z)", "Racon (Z) (10 cm)", "Racon (Z) (3 & 10 cm)" A RACON responding on a fixed frequency outside the marine band is labeled with an "F" in front of the label "RACON"

O-3400 If an electronic beacon (2C030) is within 2 mm, at chart scale, of a light (2C050, HLT=000, 001, or 002), the electronic beacon shall not be shown and the light shall be changed to include the electronic beacon as a part of the light. The RA1 and RA2 attributes of the electronic beacon (2C030) will be added to the RA1 and RA2 attributes of the light (2C050). The electronic beacon and the light are not combined if the light is a moire effect light (HLT=003) or a strip light (HLT=004). In this case, show both the light and the electronic beacon as separate symbols.

T-0854 If RA1=005 (Directional Radiobeacon), 014(Rotating Radiobeacon), 017(Circular Radiobeacon), 048(Aeronautical Radiobeacon-Non-directional), 049(Radiobeacon, type unknown), or 51(Consol), and the broadcast frequency (BF1) is known (not equal to 000), but BF1 < 285 kHz or BF1 > 325 kHz, do not show the feature.

T-0855 If RA2=005 (Directional Radiobeacon), 014(Rotating Radiobeacon), 017(Circular Radiobeacon), 048(Aeronautical Radiobeacon, Non-directional), 049(Radiobeacon, type unknown), or 51(Consol), and the broadcast frequency (BF2) is known (not equal to 000), but BF2 < 285 kHz or BF2 > 325 kHz, do not show the RA2 portion of the feature.

LEADING LINE...2C040 (LINE)

D-7012 Break line symbol in water area for overprinting point symbol with the same color. Leave space 0.5 mm on each side of the point symbol. Do not displace either the line symbol or the point symbol. Point symbols may overprint line symbols of a different color.

L-4743 If feature type is linear, the label hierarchy is:
(1) Label shall be placed 1 mm above feature, centered.
(2) Top of label shall be placed 1 mm below feature, centered.
(3) Label may be displaced along the feature; use two labels if feature length 150 mm or greater.
(4) Do not label across shoreline (2A010 or 2H075).

L-4855 When a leading line (2C040) is also part of a recommended track (6C165, RTT=003), the type for the leading line shall be omitted, if it duplicates the labels on the track.

L-4881 Marks should be briefly described using the COL or DRP attributes, if there is any doubt concerning their identity on the chart:
a. If space is minimal, the entire legend may be deleted.
b. Show BRG only, if the identity of the marks is clear.
c. Features may be named if desirable to identify the marks, for example, a COL of "2 Lts" or a DRP of "2 Bns" or "TR & Bn"
d. Exceptionally, the character of a light is given to avoid confusion with other nearby lights, for example a COL of "2 Fl R"

L-7010 The first letter in the symbol label, and any abbreviation of lights or beacons (Lt, Lts, Bn, Bn), are capitalized. Other letters are lower case

FEATURE: LEADING LINE...2C040 (LINE)

O-3420 If a clearing line (2C020) or leading line (2C040) is shown, show the feature(s) associated with it (usually light 2C050, or visual beacon 2C060). If the feature(s) are not required by the product, show as Miscellaneous Cultural Feature (9D012).

R-2728 The dashed portion of the leading line (2C040) shall be the end of the leading line nearest to the LAF.

R-2998 The length of the solid and dashed portions of the leading line (2C040) shall be determined by three geographic positions (the two end points of the line and the point where the dashed and solid portions meet).

R-3681 Delete leading line for moire effect light (2C040, LAF=008) when associated moire effect light (2C050, HLT=003) is not shown.

LIGHT...2C050 (POINT)

D-7013 When aids to navigation (2C) overprint hydrographic dangers (2D), or depth curves (2E010), the following displacement criteria applies:
a. If the aid to navigation is a fixed aid (2C030 Electronic Beacon, 2C050 Light, or 2C060 Visual Beacon), and the 2D symbol is a point symbol, delete the 2D point symbol. Show both if the 2D symbol is an area symbol.
b. If the aid to navigation is a buoy (2C010), the 2D symbol's danger curve, i.e., the dotted perimeter line, if present, is broken for the buoy symbol (excluding type).
c. If a point danger symbol contains a central graphic element, such as a + or posicut 104, 110, 114, etc., the buoy symbol is displaced off the danger symbol's centeral graphic element. The displacement shall be as little as possible to resolve the overprint. (For IALA cardinal buoys, see rule D-1914.)
d. The above criteria refers to the graphic portion of symbols only. All type and labels are movable around the graphic elements to avoid overprints. If the 2D symbol's central HDP type must be moved, it shall be placed outside the danger circle, and enclosed in parentheses.
e. Depth Curves (2E010) are broken for aids to navigation and dangers, and the type associated with these symbols.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4711 Strings of windows may be placed on two lines to avoid overprints.

L-4737 Feature name /label shall be positioned parallel to lines of latitude and readable left to right.

L-4759 Yellow, abbreviated "Y", shall be substituted for Orange "Or" or Amber "Am" when describing light color in the Character of Light attribute (COL).

L-4760 When more than one light (2C050) is at the same point, the information about those lights shall be listed, one above the other, in the order that they appear in the DMA Light List. Only one Light flare and light dot shall be shown to represent those lights.

When there is no room to stack the light legends (for example, if a legend overprints other information, features, or text), the legends may be listed horizontally (or horizontally and stacked if more than two) separated by a comma(s). They shall be listed in order of range, as they appear in the DMA Light List.

L-4761 If the only light color is white, omit color from COL. e.g., "F1 6s 12 m 8M" is a white light.

L-4762 A light with two ranges (MLR) shall be displayed separated by a slash, e.g., 14/12M. A light with more than two ranges shall have the greatest and least ranges separated by a hyphen, e.g., 22-18M.

L-4783 Label placement hierarchy:
(1) On land, one line,
(2) On land, two lines, word spellings not split.
(3) In water, one line.

FEATURE: LIGHT...2C050 (POINT)

L-4788 Name (NAM) of feature shall not be translated (into English) or changed, but shall appear in print as they appear on the original source (i.e., Banc Sud).

L-4790 A posicut shall be displayed in the TMC window for each value of TMC. If TMC = 99 (None) the TMC window shall be deleted. The lower end of the topmark posicut shall touch the feature and shall be aligned with the primary axis of the feature.

L-4792 The word "Light" shall not be included in the name (NAM) of the light.

L-4793 If the name (NAM) of the feature is the same name as the land which it is on (i.e., Cape Dana, Calva Island, Bull Hill), and the land is labeled with its name within 10 mm of the feature, no (NAM) shall be shown on the feature.

L-4831 If CCF=000 (Unknown), delete window.

L-4833 If TMC=000 (Unknown) or 099 (None), delete window.

L-4834 If TMC = 001 to 027, place the appropriate topmark symbol in the TMC window, with the lower end of the posicut touching the feature. Use the appropriate posicut for each value of TMC as follows:

001 Can (Open), use Posicut #169
002 Cone, Point Up (Open), use Posicut #170
003 Can (Filled), use Posicut #171
004 Cone, Point Up (Filled), use Posicut #172
005 "X" , use Posicut #173
006 Ball (Open), use Posicut #174
007 Double Ball (Filled), use Posicut #175
008 Double Cone, Points Upward (Filled), use Posicut #176
009 Double Cone, Points Apart (Filled), use Posicut #177
010 Double Cone, Points Downward (Filled), use Posicut #178
011 Double Cone, Points Together (Filled), use Posicut #179
012 Diamond (Open), use Posicut #180
013 Diamond (Filled), use Posicut #181
014 Cone, Point Up, Over Ball (Open), use Posicut #182
015 Cone, Point Up, Over Ball (Filled), use Posicut #183
016 Ball Over Cone, Point Up (Open), use Posicut #184
017 Ball Over Cone, Point Up (Filled), use Posicut #185
018 Cross, use Posicut #186
019 Ball (Filled), use Posicut #187
020 Broom, use Posicut #188
021 "T", use Posicut #189
022 Can Over Ball (Open), use Posicut #190
023 Cross Over Ball (Open), use Posicut #191
024 Diamond Over Ball (Filled), use Posicut #192
025 Double Ball (Open), use Posicut #193
026 Cone, Point Downward (Open), use Posicut #194
027 Double Cone, Points Apart (Open), use Posicut #195

L-4835 If RA1=000 (Unknown) or 050 (None). do not show RA1 label, and do not show Posicut #86 (7.1 mm diameter purple circle).

L-4836 If RA2=000 (Unknown) or 050 (None), do not show RA2 label.

L-4837 If SST=000 (Unknown), delete window, but show Posicut #59 (three concentric arcs - fog signal posicut).

L-4838 If SST=016 (None) delete window and do not show Posicut #59 (three concentric arcs - fog signal posicut).

FEATURE: LIGHT...2C050 (POINT)

L-4839 If SST is not 000 (Unknown) or 016 (None), label SST with appropriate legend and do not show posicut #59 (three concentric arcs - fog signal posicut).

If SST is: Use legend:
001 Bell
002 Whis
003 Horn
004 Gong
005 Dia
006 Siren
007 Reed
008 Explos

L-4840 If RA1=005 (Directional Radiobeacon), 014 (Rotating Radiobeacon), 017 (Circular Radiobeacon), 048 (Aeronautical Radiobeacon, Non-directional), or 049 (Radiobeacon, Type Unknown), and BF1 is not 000 (Unknown), and BF1 < 285 or BF1 > 325; delete RA1 window and do not show Posicut #86 (7.1 mm diameter purple circle).

L-4841 If RA2=005 (Directional Radiobeacon), 014 (Rotating Radiobeacon), 017 (Circular Radiobeacon), 048 (Aeronautical Radiobeacon, Non-directional), or 049 (Radiobeacon, Type Unknown), and BF2 is not 000 (Unknown), and BF2 < 285 or BF2 > 385, delete RA2 window.

L-4842 If PER=000 (Unknown) or 999 (None), delete window and close up any windows previously separated by the PER window (if any).

L-4843 If RA1 does not equal an attribute listed for a particular symbol, omit Posicut #86 (7.1 mm diameter purple circle) and the RA1 label.

L-4844 If RA2 does not equal an attribute listed for a particular symbol, omit the RA2 label.

L-4847 If there are only two sectors (only SS1 and SS2) and one of those sectors is an obscured sector, label only the obscured sector, and delete the sector arc of the other sector.

L-4848 The light sector label (L51-L75) shall be centered equadistant between the sector's two radii. When sectors are very wide, and there is a risk of a single sector label being lost in the other charted detail, the sector label may be repeated at intervals along the arc of the sector.

Light sector labels (L51-L75) generally show only the color of the light, using the internationally standardized abreviations for colors (see L-4849). They may, in certain cases, show additional information as described below:

a. Where sectors are differentiated by the use of various rhythems, the character of the light for a sector shall be shown on the sector arc, together with the color.

b. If thought desirable, espcecially where one sector is intensified (i.e., has a longer range), the ranges of all of the sectors are shown in the sector labels, following the color, e.g., "R 5M", and deleted from from the legend shown at the light (LVR or MLR labels). If it is not possible to show the range in each sector label, the range is shown at the light, and the label "Intens" is shown in the label of the intensified sector, following the color, e.g., "R Intens"

c. In exceptional cases where there could be confusion, fill details, including name, may be shown on a sector. This also applies where it is necessary to show the sector of a light, although the light itself lies beyond the limits of the chart.

d. An obscured sector is the arc over which the visibility of a light is curtailed by an obstruction, such as intervening topography. An obscured sector is labeled "Obscd"

e. A decrease in the apparent intensity of a light may occur in cases of partial obstructions. When considered significant, a faint sector shall be show, labeled "Faint"

FEATURE: LIGHT...2C050 (POINT)

L-4849 Abbreviations for colors for the CCF label, and other specified color legends:

If CCF is:
001 Red, abbreviate "R"
002 Red & White, abbreviate "RW"
003 Red & Green, abbreviate "RG "
004 Red & Black, abbreviate "RB"
005 Red-Green-Red, abbreviate "RGR"
006 Green, abbreviate "G"
007 Green & White, abbreviate "GW"
008 Green & Red, abbreviate "GR"
009 Green & Black, abbreviate "GB"
010 Green-Red-Green, abbreviate "GRG"
011 Green-Yellow-Black, abbreviate "GYB"
012 Yellow, abbreviate "Y"
013 Yellow & Black, abbreviate "YB"
014 Yellow-Black-Yellow, abbreviate "YBY"
015 Yellow & Red, abbreviate "YR"
016 Yellow & Green, abbreviate "YG"
017 Yellow-Red-White, abbreviate "YRW"
018 Black, abbreviate "B"
019 Black & Yellow, abbreviate "BY"
020 Black-Yellow-Black, abbreviate "BYB"
021 Black-Red-Black, abbreviate "BRB"
022 Black & White, abbreviate "BW"
023 Black & Red, abbreviate "BR"
024 Black & Green, abbreviate "BG"
025 White, abbreviate "W"
026 White & Red, abbreviate "WR"
027 White & Orange, abbreviate "W Or"
028 White & Green , abbreviate "WG"
029 White & Black, abbreviate "WB"
030 White & Yellow, abbreviate "WY"
031 White-Red-Green, abbreviate "WRG"
032 White-Green-White, abbreviate "WGW"
033 Orange, abbreviate "Or"
034 Blue, abbreviate "Bu "
035 Gray, abbreviate "Gy"
036 Violet, abbreviate "Vi"
037 Brown, abbreviate "Br"

L-4850 Abbreviations and labels for RA1 and RA2:

If RA1 or RA2 is:
004 Radio Direction Finding Station, abbreviate "RG"
005 Directional Radiobeacon, abbreviate "RD"
010 Racon, label "Racon"
014 Rotating Radiobeacon, abbreviate "RW"
017 Circular Radiobeacon, abbreviate "RC"
045 QTG Station, abbreviate "R"
046 Coast Radar Station, abbreviate "Ra"
047 Ramark, label "Ramark"
048 Aeronautical Radiobeacon, Non-directional, abbreviate "Aero RC"
049 Radiobeacon, Type Unknown, abbreviate "R Bn"
051 Consol, label "Consol"

L-4851 On a sectored light (2C050, HLT=001), if the sector width is too narrow for the sector label (L51-L75) to be fit between the sector radii, rotate the label 90 degrees to position it perpendicular to the sector arc.

L-4852 Light sector arcs shall preferably be placed 5 mm from the outer end of the sector radii. If a sectored light is so close to the chart border that one or more of the sector radii are cut short by the chart border, the sector arc for that sector shall preferably be 5mm from the end of the shorter of the two sector radii. Sector arcs may be moved closer to the light, or closer to the end of the sector, to avoid overprints due to chart clutter. The length of the sector limits shall not extend past the range of the light.

FEATURE: LIGHT...2C050 (POINT)

L-4853 If there is only one radio aid at a feature, it shall take its value from the RA1 attribute and RA2 shall have the value 050 (None).

L-4856 If PER is not 000 (Unknown) or 998 (None), the numerical value for PER shall be immediately followed by a lower case letter "s" printed in the same type as PER (i.e., 12s). When PER is not shown, do not show the "s".

L-4857 When EOL has a known value, and it is not zero (0), the numerical value for EOL shall be immediately followed by a lower case letter "m" printed in the same type as EOL (i.e., 25 m). When EOL is not shown, do not show the "m".

L-4858 When LVR or has a known value and it is not zero (0), the numerical value for LVR shall be immediately followed by a capital letter "M" printed in the same type as LVR (i.e., 10 M). When no light range is shown, do not show the "M".

L-4865 Occasional lights are lights that are lit only when specifically needed, i.e., shown intermittently (EXS=034). If a light is EXS=034 (Intermittent Operation), show legend "(Occas)". If EXS=033 (Continous Operation), no EXS label is required.

L-4867 If two or more lights are stacked vertically, the legend "(vert)" shall be printed in 7 point Swiss 742 condensed type, to the right of the LVR; or PER if the LVR is not shown; or COL if PER and LVR are not shown.

L-4868 The CCF label for symbols 2C010P001, 2C010P013, 2C050P002, and 2C060P001 shall be centered immediately below the small circle marking the position of the feature.

L-4875 If there is more than one visibility range at a light, the attribute MLR is used in place of LVR attribute.

L-4876 The MLR label (i.e., 21-15 or 12/15) shall be shown in place of the LVR label on the symbology if there is more than one visibility at a light.

L-4888 A light legend may be shortened to reduce chart clutter and eliminate overprints, but only if there is no other way to show the entire light legend, and the full legend is shown on charts comprising the larger scale coverage for that same area. In shortening the legend, the following priority is used:

1. Omit EOL first
2. Omit PER second
3. Omit LVR (or MLR) third
4. Omit all detail except for light dot and flare.

L-4899 Miscellaneous labels occasionally may be found in association with marine navigational aids (2C). If a text label is shown on hydrographic source material, it should be considered significant for navigation. Examples are:

-A fog detection light, label "Fog Det Lt"

-A floodlit structure near navigable water, label "(Illiminated)"

-A daytime light, if character (COL) of light in the day is different from the character shown at night. Show daytime character, followed by "Day" in parentheses, for example:
(F 37m 11M Day)

-Unwatched light, with no standby or emergency arrangements, label "(U)"

-A temporary light or buoy, label "(temp)". If seasonal, include months, for example: "(Apr-Oct)"

-A fog light, if light is only shown in fog, or the light during fog is different from the character (COL) shown at other times, show character in fog, followed by "(in fog)", in parentheses. For example: Fl 5s (in fog)

-A privately maintained light or buoy, label "(priv)"

-RACONs occasionally will show a morse code identification, or an operating frequency, for example, "Racon (Z)", "Racon (Z) (10 cm)", "Racon (Z) (3 & 10 cm)" A RACON responding on a fixed frequency outside the marine band is labeled with an "F" in front of the label "RACON"

FEATURE: LIGHT...2C050 (POINT)

O-3400 If an electronic beacon (2C030) is within 2 mm, at chart scale, of a light (2C050, HLT=000, 001, or 002), the electronic beacon shall not be shown and the light shall be changed to include the electronic beacon as a part of the light. The RA1 and RA2 attributes of the electronic beacon (2C030) will be added to the RA1 and RA2 attributes of the light (2C050). The electronic beacon and the light are not combined if the light is a moire effect light (HLT=003) or a strip light (HLT=004). In this case, show both the light and the electronic beacon as separate symbols.

O-3415 If a sectored light (2C050, HLT=001) has only one lighted sector, and the light is not the LAF of a clearing line (2C020) orlLeading line (2C040), do not show the sectors at that light.

R-2295 If a radio aids circle (Posicut #86) is shown on a symbol, it shall be centered on the origin of the symbol. Since they are a different color, TMC topmark posicuts may overprint the radio aid circle. The radar reflector (Posicut #93), if shown, shall be positioned outside the radio aids circle, preferably near the top of the symbol. The fog signal (Posicut #59), if shown, shall preferably be positioned concentric with the radio aids circle, with its middle arc even with the radio aids circle, which may be broken for 0.2 mm on both sides of the fog signal posicut. The fog signal posicut may be shown in any direction from the navigational aid, to avoid overprints, or moved completely outside the radio aids circle, if necessary.

R-2716 Light sector radii lengths shall be 150 mm long, or the length in miles of the range of the light in that sector, whichever is shortest. If the range of the specified sector is unknown, the least range of the MLR attribute value on the light is used. Sector radii length may be adjusted to avoid overprints, but in no case shall the sector radii be extended beyond the nominal range of the light sector.

R-2729 Light sector radii and arcs shall be broken to prevent overprinting of all chart symbols printed in solid black (SPC-58600). This rule does not apply to screened black symbols.

R-2759 If SSC=079 (Other) or 000 (Unknown), show beacon with Posicut # 85. If SSC=100 (Tower), and CCF=006 (Green), 009 (Green-Black), 018 (Black), or 024 (Black-Green), show beacon tower with Posicut # 238 (Filled beacon tower). If SSC=100 (Tower), and CCF is not one of these colors, show beacon tower with Posicut #237 (Open beacon tower). If SSC=105 (Lattice), show lattice beacon with Posicut # 239.

R-2832 EOL of feature shall be shown to the nearest whole meter rounded to the next higher value at .5 meter, e.g., 10.4 = 10, whereas 10.5 = 11.

R-2849 Light flares (Posicut No. 94) shall be oriented in order as follows:
(1) So that it does not overprint on the feature or a legend associated with that feature (except for the 7.1 mm diameter circle representing a radio aid to navigation, which the flare may overprint).
(2) So it does not overprint other chart data (i.e., soundings, pipelines, submarine cables, etc.)
(3) So that the wide end of the flare is pointed toward the legend of the light, or to seaward along the line, in the case of clearing lines (2C020), and clearing lines (2C040).

R-2884 The point of the light flare (Posicut No. 94) shall be 1 mm from the dot or small circle representing the position of the feature.

R-2887 Reserve fog signals shall not be shown on product.

R-2889 Light (2C050) characteristics on bridges (1Q040):
a. Bridge lights that mark the centers of navigable or unnavigable spans, and are not traffic signals, should be charted showing only the character (COL), if space permits.
b. Where such lights change character to regulate traffic, they should be charted showing only the character (COL), and if on a chart at 1:50,000 or larger (HAC 1-2), shown in conjunction with a marine traffic signal station (2B155, STN=014).
c. Lights on bridges other than "a." or "b." above shall show full characteristics.

FEATURE: LIGHT...2C050 (POINT)

R-2920 Periods of lights (PER on 2C050) shall be shown as follows:
a. If PER is a whole number, (e.g., 1,2,3, etc.), show it as an integer, e.g., 4s, 12s, 120s. Note that even above one minute, the period is still shown in seconds.
b. If PER is not a whole number, i.e., ends in .1 to .9, show it as a 1/2 fraction if .5 seconds, and as a decimal, i.e., 1.2s, if other than .5 seconds. Tenths of seconds are not rounded.

R-2992 If REF=002 (Radar Reflector Absent), do not shown Posicut #93 (Radar Reflector posicut).

R-3683 When two separate sectored lights (2C050, HLT=001) have sectors which overlap, and these overlapping sectors overprint a fairway (6C170, MLT=002), and the sector labels (L51 through L75) for those overlapping sectors are each white "W", delete the overlapping dashed line segments from those sectors.

S-1402 When two light sectors (2C050, HLT=001)) which originate from one point, have a coincident side, only one of the coincident sides shall be portrayed.

T-0820 When an area is covered by a larger scale chart, inshore lights may be omitted if their visibility is less than the more seaward lights. All lights which have a radio navigational aid at them shall be shown.

T-0853 When two lights (2C050) have the dot (Posicut #199) overprinting or spaced closer than 2 mm, delete the light with the least range (LVR). If the two lights form a clearing line (2C020) or leading line (2C040), show both characteristics, in a combined legend, for example: "2FR" for two fixed red lights", or "OcR & Oc" for an occulting red light and an occulting white light.

VISUAL BEACON...2C060 (POINT)

D-7013 When aids to navigation (2C) overprint hydrographic dangers (2D), or depth curves (2E010), the following displacement criteria applies:
a. If the aid to navigation is a fixed aid (2C030 Electronic Beacon, 2C050 Light, or 2C060 Visual Beacon), and the 2D symbol is a point symbol, delete the 2D point symbol. Show both if the 2D symbol is an area symbol.
b. If the aid to navigation is a buoy (2C010), the 2D symbol's danger curve, i.e., the dotted perimeter line, if present, is broken for the buoy symbol (excluding type).
c. If a point danger symbol contains a central graphic element, such as a + or posicut 104, 110, 114, etc., the buoy symbol is displaced off the danger symbol's centeral graphic element. The displacement shall be as little as possible to resolve the overprint. (For IALA cardinal buoys, see rule D-1914.)
d. The above criteria refers to the graphic portion of symbols only. All type and labels are movable around the graphic elements to avoid overprints. If the 2D symbol's central HDP type must be moved, it shall be placed outside the danger circle, and enclosed in parentheses.
e. Depth Curves (2E010) are broken for aids to navigation and dangers, and the type associated with these symbols.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4737 Feature name /label shall be positioned parallel to lines of latitude and readable left to right.

L-4783 Label placement hierarchy:
(1) On land, one line,
(2) On land, two lines, word spellings not split.
(3) In water, one line.

L-4790 A posicut shall be displayed in the TMC window for each value of TMC. If TMC = 99 (None) the TMC window shall be deleted. The lower end of the topmark posicut shall touch the feature and shall be aligned with the primary axis of the feature.

FEATURE: VISUAL BEACON...2C060 (POINT)

L-4793 If the name (NAM) of the feature is the same name as the land which it is on (i.e., Cape Dana, Calva Island, Bull Hill), and the land is labeled with its name within 10 mm of the feature, no (NAM) shall be shown on the feature.

L-4831 If CCF=000 (Unknown), delete window.

L-4833 If TMC=000 (Unknown) or 099 (None), delete window.

L-4834 If TMC = 001 to 027, place the appropriate topmark symbol in the TMC window, with the lower end of the posicut touching the feature. Use the appropriate posicut for each value of TMC as follows:

001 Can (Open), use Posicut #169
002 Cone, Point Up (Open), use Posicut #170
003 Can (Filled), use Posicut #171
004 Cone, Point Up (Filled), use Posicut #172
005 "X" , use Posicut #173
006 Ball (Open), use Posicut #174
007 Double Ball (Filled), use Posicut #175
008 Double Cone, Points Upward (Filled), use Posicut #176
009 Double Cone, Points Apart (Filled), use Posicut #177
010 Double Cone, Points Downward (Filled), use Posicut #178
011 Double Cone, Points Together (Filled), use Posicut #179
012 Diamond (Open), use Posicut #180
013 Diamond (Filled), use Posicut #181
014 Cone, Point Up, Over Ball (Open), use Posicut #182
015 Cone, Point Up, Over Ball (Filled), use Posicut #183
016 Ball Over Cone, Point Up (Open), use Posicut #184
017 Ball Over Cone, Point Up (Filled), use Posicut #185
018 Cross, use Posicut #186
019 Ball (Filled), use Posicut #187
020 Broom, use Posicut #188
021 "T", use Posicut #189
022 Can Over Ball (Open), use Posicut #190
023 Cross Over Ball (Open), use Posicut #191
024 Diamond Over Ball (Filled), use Posicut #192
025 Double Ball (Open), use Posicut #193
026 Cone, Point Downward (Open), use Posicut #194
027 Double Cone, Points Apart (Open), use Posicut #195

L-4835 If RA1=000 (Unknown) or 050 (None). do not show RA1 label, and do not show Posicut #86 (7.1 mm diameter purple circle).

L-4836 If RA2=000 (Unknown) or 050 (None), do not show RA2 label.

L-4837 If SST=000 (Unknown), delete window, but show Posicut #59 (three concentric arcs - fog signal posicut).

L-4838 If SST=016 (None) delete window and do not show Posicut #59 (three concentric arcs - fog signal posicut).

L-4839 If SST is not 000 (Unknown) or 016 (None), label SST with appropriate legend and do not show posicut #59 (three concentric arcs - fog signal posicut).

If SST is: Use legend:
001 Bell
002 Whis
003 Horn
004 Gong
005 Dia
006 Siren
007 Reed
008 Explos

L-4840 If RA1=005 (Directional Radiobeacon), 014 (Rotating Radiobeacon), 017 (Circular Radiobeacon), 048 (Aeronautical Radiobeacon, Non-directional), or 049 (Radiobeacon, Type Unknown), and BF1 is not 000 (Unknown), and BF1 < 285 or BF1 > 325; delete RA1 window and do not show Posicut #86 (7.1 mm diameter purple circle).

FEATURE: VISUAL BEACON...2C060 (POINT)

L-4841 If RA2=005 (Directional Radiobeacon), 014 (Rotating Radiobeacon), 017 (Circular Radiobeacon), 048 (Aeronautical Radiobeacon, Non-directional), or 049 (Radiobeacon, Type Unknown), and BF2 is not 000 (Unknown), and BF2 < 285 or BF2 > 385, delete RA2 window.

L-4843 If RA1 does not equal an attribute listed for a particular symbol, omit Posicut #86 (7.1 mm diameter purple circle) and the RA1 label.

L-4844 If RA2 does not equal an attribute listed for a particular symbol, omit the RA2 label.

L-4849 Abbreviations for colors for the CCF label, and other specified color legends:

If CCF is:
001 Red, abbreviate "R"
002 Red & White, abbreviate "RW"
003 Red & Green, abbreviate "RG "
004 Red & Black, abbreviate "RB"
005 Red-Green-Red, abbreviate "RGR"
006 Green, abbreviate "G"
007 Green & White, abbreviate "GW"
008 Green & Red, abbreviate "GR"
009 Green & Black, abbreviate "GB"
010 Green-Red-Green, abbreviate "GRG"
011 Green-Yellow-Black, abbreviate "GYB"
012 Yellow, abbreviate "Y"
013 Yellow & Black, abbreviate "YB"
014 Yellow-Black-Yellow, abbreviate "YBY"
015 Yellow & Red, abbreviate "YR"
016 Yellow & Green, abbreviate "YG"
017 Yellow-Red-White, abbreviate "YRW"
018 Black, abbreviate "B"
019 Black & Yellow, abbreviate "BY"
020 Black-Yellow-Black, abbreviate "BYB"
021 Black-Red-Black, abbreviate "BRB"
022 Black & White, abbreviate "BW"
023 Black & Red; abbreviate "BR"
024 Black & Green, abbreviate "BG"
025 White, abbreviate "W"
026 White & Red, abbreviate "WR"
027 White & Orange, abbreviate "W Or"
028 White & Green , abbreviate "WG"
029 White & Black, abbreviate "WB"
030 White & Yellow, abbreviate "WY"
031 White-Red-Green, abbreviate "WRG"
032 White-Green-White, abbreviate "WGW"
033 Orange, abbreviate "Or"
034 Blue, abbreviate "Bu "
035 Gray, abbreviate "Gy"
036 Violet, abbreviate "Vi"
037 Brown, abbreviate "Br"

L-4850 Abbreviations and labels for RA1 and RA2:

If RA1 or RA2 is:
004 Radio Direction Finding Station, abbreviate "RG"
005 Directional Radiobeacon, abbreviate "RD"
010 Racon, label "Racon"
014 Rotating Radiobeacon, abbreviate "RW"
017 Circular Radiobeacon, abbreviate "RC"
045 QTG Station, abbreviate "R"
046 Coast Radar Station, abbreviate "Ra"
047 Ramark, label "Ramark"
048 Aeronautical Radiobeacon, Non-directional, abbreviate "Aero RC"
049 Radiobeacon, Type Unknown, abbreviate "R Bn"
051 Consol, label "Consol"

FEATURE: VISUAL BEACON...2C060 (POINT)

L-4853 If there is only one radio aid at a feature, it shall take its value from the RA1 attribute and RA2 shall have the value 050 (None).

L-4868 The CCF label for symbols 2C010P001, 2C010P013, 2C050P002, and 2C060P001 shall be centered immediately below the small circle marking the position of the feature.

R-2295 If a radio aids circle (Posicut #86) is shown on a symbol, it shall be centered on the origin of the symbol. Since they are a different color, TMC topmark posicuts may overprint the radio aid circle. The radar reflector (Posicut #93), if shown, shall be positioned outside the radio aids circle, preferably near the top of the symbol. The fog signal (Posicut #59), if shown, shall preferably be positioned concentric with the radio aids circle, with its middle arc even with the radio aids circle, which may be broken for 0.2 mm on both sides of the fog signal posicut. The fog signal posicut may be shown in any direction from the navigational aid, to avoid overprints, or moved completely outside the radio aids circle, if necessary.

R-2759 If SSC=079 (Other) or 000 (Unknown), show beacon with Posicut # 85. If SSC=100 (Tower), and CCF=006 (Green), 009 (Green-Black), 018 (Black), or 024 (Black-Green), show beacon tower with Posicut # 238 (Filled beacon tower). If SSC=100 (Tower), and CCF is not one of these colors, show beacon tower with Posicut #237 (Open beacon tower). If SSC=105 (Lattice), show lattice beacon with Posicut # 239.

R-2992 If REF=002 (Radar Reflector Absent), do not shown Posicut #93 (Radar Reflector posicut).

S-1403 If a channel is marked by a feature but because of the product scale individual features overprint or are closer than 3 mm, replace the features with the legend "Buoyed channel" (for 2C010) or "Channel marked by beacons" (for 2C060). Legend will be aligned with the channel.

MISCELLANEOUS UNDERWATER FEATURE...2D000 (AREA)

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4729 If symbols overprint each other, labels are condensed as follows:
(1) If the labels are identical, only one is retained.
(2) If the labels are not identical, they shall be condensed in to one legend, e.g., "Fishhaven and Well". If multiple depths are shown, only the shallowest is retained.

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:
Hydro
power
plant

FEATURE: MISCELLANEOUS UNDERWATER FEATURE...2D000 (AREA)

L-4807 Type shall be placed in the following preference:
(a) Placed on one horizontal line centered in feature.
(b) Broken into multiple horizontal lines, centered in feature, with a 1 mm space between lines.
(c) Placed on one line outside feature. Use Rule L-4722 for placement. If present, HDP shall always be positioned inside area.
(d) Placed on two lines to avoid overprints. Use Rule L-4722 for placement. If present, HDP shall always be placed inside area.

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

R-2221 HGT is used to describe height when feature is above the surface of the water at High Water (VRC=001). HDI is not applicable when VRC=001.
HDI values 000, 009, 010, 011, 012 are used to describe knowledge about a depth of a feature when the feature is below the water surface (VRC=004).
HDI values 013 and 014 are used to describe knowledge about the drying height of a feature when it covers and uncovers, i.e., between high and low water (VRC=008).
HDP is used to record the depth of a feature when HDI=009, 010 or 011. HDP is not applicable when the depth is unknown (HDI=000 or 012) or when the feature covers and uncovers (VRC=008) - see HDH, or when the feature is above High Water (VRC=001).
HDH is used to record the drying height of a feature when HDI=013. HDH is not applicable when the drying height is unknown (HDI=014), or the feature is below water (VRC=004) - see HDP, or when the feature is above High Water (VRC=001).

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

R-2806 If areas where separate dangers coalesce because of scale, the danger curves (dotted lines) are deleted except for those on the outermost perimeter of the aggregate danger hazard. A smooth dotted line is drawn around the area.

R-2916 Dangers with danger curves (dotted lines) around them which fall inside other danger areas with danger curves around them, shall have the inner dotted line deleted.

R-3704 HDI=010 (Depth Known by Wire Drag) is not applicable when SFC=003 (Fish Haven).

FEATURE: MISCELLANEOUS UNDERWATER FEATURE...2D000 (AREA)

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

MISCELLANEOUS UNDERWATER FEATURE...2D000 (POINT)

D-1909 If point symbol overprints shoreline (2A010 or 2H075), the HDP type, posicut, or graphic in the center of symbol shall be displaced seaward until they no longer overprint the shoreline. If the danger curve (dotted perimeter line) overprints the shoreline, that portion of the dotted perimeter line falling on land shall be deleted.

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4729 If symbols overprint each other, labels are condensed as follows:
(1) If the labels are identical, only one is retained.
(2) If the labels are not identical, they shall be condensed in to one legend, e.g., "Fishhaven and Well". If multiple depths are shown, only the shallowest is retained.

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:
Hydro
power
plant

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

L-4872 HDP label shall be centered in the circle.

L-4891 Variable type size for HDP values enclosed by danger curves (dotted circles): If HDP < 10, (a single digit principal digit), apply 7 point type to the principal digit, and 5 point type to the subscript, if there is one. If HDP >= 10 (a double digit principal digit), apply 6 point type to the principal digit, and 5 point type to the subsript, if there is one.

FEATURE: MISCELLANEOUS UNDERWATER FEATURE...2D000 (POINT)

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

R-2221 HGT is used to describe height when feature is above the surface of the water at High Water (VRC=001). HDI is not applicable when VRC=001.
HDI values 000, 009, 010, 011, 012 are used to describe knowledge about a depth of a feature when the feature is below the water surface (VRC=004).
HDI values 013 and 014 are used to describe knowledge about the drying height of a feature when it covers and uncovers, i.e., between high and low water (VRC=008).
HDP is used to record the depth of a feature when HDI=009, 010 or 011. HDP is not applicable when the depth is unknown (HDI=000 or 012) or when the feature covers and uncovers (VRC=008) - see HDH, or when the feature is above High Water (VRC=001).
HDH is used to record the drying height of a feature when HDI=013. HDH is not applicable when the drying height is unknown (HDI=014), or the feature is below water (VRC=004) - see HDP, or when the feature is above High Water (VRC=001).

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2806 If areas where separate dangers coalesce because of scale, the danger curves (dotted lines) are deleted except for those on the outermost perimeter of the aggregate danger hazard. A smooth dotted line is drawn around the area.

R-2916 Dangers with danger curves (dotted lines) around them which fall inside other danger areas with danger curves around them, shall have the inner dotted line deleted.

R-3704 HDI=010 (Depth Known by Wire Drag) is not applicable when SFC=003 (Fish Haven).

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

R-3709 The diameter of the circular symbol perimeter line may be reduced in congested areas to avoid overprinting other symbols, but must be at least 2.0 mm diameter, and cannot come closer than 0.2 mm to any type or graphic symbol shown inside the circle. In non-congested areas the normal symbol diameter shall be shown.

FEATURE: MISCELLANEOUS UNDERWATER FEATURE...2D000 (POINT)

S-1401 When two or more point obstruction (2D000, SFC=001) symbols, (dotted lines) overprint, and the attribute values are identical, one symbol shall be placed in the center of the group and shall be labeled with the number of obstructions in the group, e.g., 2 Obstr's, 3 Obstr's, etc. Type is 6 point Swiss 742 italic, in color Black SPC-58600.

BREAKERS...2D010 (AREA)

L-4705 Labeling areas, in order of preference:
(1) Centered in area on one line in the area, type is horizontal, reading left to right.
(2) Centered in area on one line in the area, oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(3) Centered in area on two approximately equal lines, without splitting a word, type is horizontal, reading left to right.
(4) Centered on two approximately equal lines without splitting a word, type is oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(5) Use Rule L-4722 for type placement if the area is too small to place the type inside the area.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

R-2911 When two or more identical symbols overprint each other, delete the portions that overlap and show as one symbol with an outline of the combined area of the symbols.

BREAKERS...2D010 (POINT)

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4706 If the attribute value is not known, or the attribute value for none or not applicable, delete window and condense remaining windows.

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:

Hydro
power
plant

FEATURE: BREAKERS...2D010 (POINT)

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

S-1404 If two or more point breakers (2D010) fall within 15 mm of each other, show one symbol in the center of the group.

CRIB...2D020 (AREA)

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4729 If symbols overprint each other, labels are condensed as follows:
(1) If the labels are identical, only one is retained.
(2) If the labels are not identical, they shall be condensed in to one legend, e.g., "Fishhaven and Well". If multiple depths are shown, only the shallowest is retained.

L-4807 Type shall be placed in the following preference:
(a) Placed on one horizontal line centered in feature.
(b) Broken into multiple horizontal lines, centered in feature, with a 1 mm space between lines.
(c) Placed on one line outside feature. Use Rule L-4722 for placement. If present, HDP shall always be positioned inside area.
(d) Placed on two lines to avoid overprints. Use Rule L-4722 for placement. If present, HDP shall always be placed inside area.

FEATURE: CRIB...2D020 (AREA)

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

L-4809 When two or more identical features fall within 10 mm of each other, one legend with plural description shall be shown, with type placed as close as possible to the center of the group without overprinting features.

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

R-2221 HGT is used to describe height when feature is above the surface of the water at High Water (VRC=001). HDI is not applicable when VRC=001.
HDI values 000, 009, 010, 011, 012 are used to describe knowledge about a depth of a feature when the feature is below the water surface (VRC=004).
HDI values 013 and 014 are used to describe knowledge about the drying height of a feature when it covers and uncovers, i.e., between high and low water (VRC=008).
HDP is used to record the depth of a feature when HDI=009, 010 or 011. HDP is not applicable when the depth is unknown (HDI=000 or 012) or when the feature covers and uncovers (VRC=008) - see HDH, or when the feature is above High Water (VRC=001).
HDH is used to record the drying height of a feature when HDI=013. HDH is not applicable when the drying height is unknown (HDI=014), or the feature is below water (VRC=004) - see HDP, or when the feature is above High Water (VRC=001).

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2802 Where symbols with the same feature code but different values of VRC are adjacent to each other, the boundary of the feature that is the highest in the vertical plane shall be shown, and the boundary of the feature that is lower shall be deleted. For example, the feature above water is shown whole, while the feature that covers and uncovers has that portion of its symbol perimeter that overprints the higher feature deleted

R-2911 When two or more identical symbols overprint each other, delete the portions that overlap and show as one symbol with an outline of the combined area of the symbols.

R-3672 Show land tint inside the symbol. If attribute VRC is present, show land tint only if VRC=001 (Above surface/does not cover at High Water).

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

FEATURE: CRIB...2D020 (POINT)

CRIB...2D020 (POINT)

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4729 If symbols overprint each other, labels are condensed as follows:
(1) If the labels are identical, only one is retained.
(2) If the labels are not identical, they shall be condensed in to one legend, e.g., "Fishhaven and Well". If multiple depths are shown, only the shallowest is retained.

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

L-4809 When two or more identical features fall within 10 mm of each other, one legend with plural description shall be shown, with type placed as close as possible to the center of the group without overprinting features.

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

FEATURE: CRIB...2D020 (POINT)

R-2221 HGT is used to describe height when feature is above the surface of the water at High Water (VRC=001). HDI is not applicable when VRC=001.
HDI values 000, 009, 010, 011, 012 are used to describe knowledge about a depth of a feature when the feature is below the water surface (VRC=004).
HDI values 013 and 014 are used to describe knowledge about the drying height of a feature when it covers and uncovers, i.e., between high and low water (VRC=008).
HDP is used to record the depth of a feature when HDI=009, 010 or 011. HDP is not applicable when the depth is unknown (HDI=000 or 012) or when the feature covers and uncovers (VRC=008) - see HDH, or when the feature is above High Water (VRC=001).
HDH is used to record the drying height of a feature when HDI=013. HDH is not applicable when the drying height is unknown (HDI=014), or the feature is below water (VRC=004) - see HDP, or when the feature is above High Water (VRC=001).

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2911 When two or more identical symbols overprint each other, delete the portions that overlap and show as one symbol with an outline of the combined area of the symbols.

R-3672 Show land tint inside the symbol. If attribute VRC is present, show land tint only if VRC=001 (Above surface/does not cover at High Water).

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

DISCOLORED WATER...2D030 (AREA)

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:
Hydro
power
plant

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

FEATURE: DISCOLORED WATER...2D030 (AREA)

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

R-2287 Discolored water (2D030) shall not be placed on a chart unless circumstances indicate the probable existence of shoal water.

R-2911 When two or more identical symbols overprint each other, delete the portions that overlap and show as one symbol with an outline of the combined area of the symbols.

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

DISCOLORED WATER...2D030 (POINT)

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:
Hydro
power
plant

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

L-4809 When two or more identical features fall within 10 mm of each other, one legend with plural description shall be shown, with type placed as close as possible to the center of the group without overprinting features.

FEATURE: DISCOLORED WATER...2D030 (POINT)

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

R-2287 Discolored water (2D030) shall not be placed on a chart unless circumstances indicate the probable existence of shoal water.

R-2911 When two or more identical symbols overprint each other, delete the portions that overlap and show as one symbol with an outline of the combined area of the symbols.

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

EDDIES...2D040 (AREA)

D-1907 Point features, or individual posicuts of an area symbol, may be displaced <= 5 mm, at chart scale, to avoid overprints.

R-2913 Features with areas greater than 100 square cm shall be represented by a legend, e.g., Kelp, Eddies, Overfalls, rather than by the graphic symbol. *Type is 6 point Swiss 742. Black SPC-58600, and label is scattered over area at approximately 50 mm intervals. Position is horizontal and shall not overprint other features.*

EDDIES...2D040 (POINT)

D-1907 Point features, or individual posicuts of an area symbol, may be displaced <= 5 mm, at chart scale, to avoid overprints.

FOUL GROUND...2D050 (AREA)

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

FEATURE: FOUL GROUND...2D050 (AREA)

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4729 If symbols overprint each other, labels are condensed as follows:
(1) If the labels are identical, only one is retained.
(2) If the labels are not identical, they shall be condensed in to one legend, e.g., "Fishhaven and Well". If multiple depths are shown, only the shallowest is retained.

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:
Hydro
power
plant

L-4807 Type shall be placed in the following preference:
(a) Placed on one horizontal line centered in feature.
(b) Broken into multiple horizontal lines, centered in feature, with a 1 mm space between lines.
(c) Placed on one line outside feature. Use Rule L-4722 for placement. If present, HDP shall always be positioned inside area.
(d) Placed on two lines to avoid overprints. Use Rule L-4722 for placement. If present, HDP shall always be placed inside area.

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

R-2221 HGT is used to describe height when feature is above the surface of the water at High Water (VRC=001). HDI is not applicable when VRC=001.
HDI values 000, 009, 010, 011, 012 are used to describe knowledge about a depth of a feature when the feature is below the water surface (VRC=004).
HDI values 013 and 014 are used to describe knowledge about the drying height of a feature when it covers and uncovers, i.e., between high and low water (VRC=008).
HDP is used to record the depth of a feature when HDI=009, 010 or 011. HDP is not applicable when the depth is unknown (HDI=000 or 012) or when the feature covers and uncovers (VRC=008) - see HDH, or when the feature is above High Water (VRC=001).
HDH is used to record the drying height of a feature when HDI=013. HDH is not applicable when the drying height is unknown (HDI=014), or the feature is below water (VRC=004) - see HDP, or when the feature is above High Water (VRC=001).

FEATURE: FOUL GROUND...2D050 (AREA)

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

R-2806 If areas where separate dangers coalesce because of scale, the danger curves (dotted lines) are deleted except for those on the outermost perimeter of the aggregate danger hazard. A smooth dotted line is drawn around the area.

FOUL GROUND...2D050 (POINT)

D-1909 If point symbol overprints shoreline (2A010 or 2H075), the HDP type, posicut, or graphic in the center of symbol shall be displaced seaward until they no longer overprint the shoreline. If the danger curve (dotted perimeter line) overprints the shoreline, that portion of the dotted perimeter line falling on land shall be deleted.

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4729 If symbols overprint each other, labels are condensed as follows:
(1) If the labels are identical, only one is retained.
(2) If the labels are not identical, they shall be condensed in to one legend, e.g., "Fishhaven and Well". If multiple depths are shown, only the shallowest is retained.

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:
Hydro
power
plant

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

L-4872 HDP label shall be centered in the circle.

L-4891 Variable type size for HDP values enclosed by danger curves (dotted circles): If HDP < 10, (a single digit principal digit), apply 7 point type to the principal digit, and 5 point type to the subscript, if there is one. If HDP >= 10 (a double digit principal digit), apply 6 point type to the principal digit, and 5 point type to the subsript, if there is one.

FEATURE: FOUL GROUND...2D050 (POINT)

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

R-2221 HGT is used to describe height when feature is above the surface of the water at High Water (VRC=001). HDI is not applicable when VRC=001.
HDI values 000, 009, 010, 011, 012 are used to describe knowledge about a depth of a feature when the feature is below the water surface (VRC=004).
HDI values 013 and 014 are used to describe knowledge about the drying height of a feature when it covers and uncovers, i.e., between high and low water (VRC=008).
HDP is used to record the depth of a feature when HDI=009, 010 or 011. HDP is not applicable when the depth is unknown (HDI=000 or 012) or when the feature covers and uncovers (VRC=008) - see HDH, or when the feature is above High Water (VRC=001).
HDH is used to record the drying height of a feature when HDI=013. HDH is not applicable when the drying height is unknown (HDI=014), or the feature is below water (VRC=004) - see HDP, or when the feature is above High Water (VRC=001).

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2806 If areas where separate dangers coalesce because of scale, the danger curves (dotted lines) are deleted except for those on the outermost perimeter of the aggregate danger hazard. A smooth dotted line is drawn around the area.

R-3709 The diameter of the circular symbol perimeter line may be reduced in congested areas to avoid overprinting other symbols, but must be at least 2.0 mm diameter, and cannot come closer than 0.2 mm to any type or graphic symbol shown inside the circle. In non-congested areas the normal symbol diameter shall be shown.

KELP...2D060 (AREA)

D-1907 Point features, or individual posicuts of an area symbol, may be displaced <= 5 mm, at chart scale, to avoid overprints.

R-2913 Features with areas greater than 100 square cm shall be represented by a legend, e.g., Kelp, Eddies, Overfalls, rather than by the graphic symbol. Type is 6 point Swiss 742. Black SPC-58600, and label is scattered over area at approximately 50 mm intervals. Position is horizontal and shall not overprint other features.

KELP...2D060 (POINT)

D-1907 Point features, or individual posicuts of an area symbol, may be displaced <= 5 mm, at chart scale, to avoid overprints.

FEATURE: OVERFALLS /TIDE RIPS...2D080 (AREA)

OVERFALLS /TIDE RIPS...2D080 (AREA)

D-1907 Point features, or individual posicuts of an area symbol, may be displaced <= 5 mm, at chart scale, to avoid overprints.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4737 Feature name /label shall be positioned parallel to lines of latitude and readable left to right.

R-2913 Features with areas greater than 100 square cm shall be represented by a legend, e.g., Kelp, Eddies, Overfalls, rather than by the graphic symbol. Type is 6 point Swiss 742. Black SPC-58600, and label is scattered over area at approximately 50 mm intervals. Position is horizontal and shall not overprint other features.

OVERFALLS /TIDE RIPS...2D080 (POINT)

D-1907 Point features, or individual posicuts of an area symbol, may be displaced <= 5 mm, at chart scale, to avoid overprints.

PILING...2D100 (AREA)

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:
Hydro
power
plant

L-4807 Type shall be placed in the following preference:
(a) Placed on one horizontal line centered in feature.
(b) Broken into multiple horizontal lines, centered in feature, with a 1 mm space between lines.
(c) Placed on one line outside feature. Use Rule L-4722 for placement. If present, HDP shall always be positioned inside area.
(d) Placed on two lines to avoid overprints. Use Rule L-4722 for placement. If present, HDP shall always be placed inside area.

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

FEATURE: *PILING...2D100 (AREA)*

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

R-2914 Features shown as points on cartographic source material shall be shown as points, except as follows: If more than five point symbols fall inside an area of 1 square centimeter at product scale, show as an area symbol, labeled, and with a smooth danger curve (dotted line) around them. If any of the point features extend above High Water (VRC=001), show area symbol as above surface (VRC=001). IF no point features are above the surface at High Water, show area symbol as submerged (VRC=004).

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

PILING...2D100 (POINT)

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:
Hydro
power
plant

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

FEATURE: PILING...2D100 (POINT)

L-4809 When two or more identical features fall within 10 mm of each other, one legend with plural description shall be shown, with type placed as close as possible to the center of the group without overprinting features.

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

R-2914 Features shown as points on cartographic source material shall be shown as points, except as follows: If more than five point symbols fall inside an area of 1 square centimeter at product scale, show as an area symbol, labeled, and with a smooth danger curve (dotted line) around them. If any of the point features extend above High Water (VRC=001), show area symbol as above surface (VRC=001). IF no point features are above the surface at High Water, show area symbol as submerged (VRC=004).

PLATFORM...2D110 (POINT)

L-4706 If the attribute value is not known, or the attribute value for none or not applicable, delete window and condense remaining windows.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:
Hydro
power
plant

L-4839 If SST is not 000 (Unknown) or 016 (None), label SST with appropriate legend and do not show posicut #59 (three concentric arcs - fog signal posicut).

If SST is:	Use legend:
001	Bell
002	Whis
003	Horn
004	Gong
005	Dia
006	Siren
007	Reed
008	Explos

FEATURE: PLATFORM...2D110 (POINT)

T-0800 If Platforms (2D110) <= 3 mm apart at chart scale:
HAC 1 & 2 - Do not thin.
HAC 3 - use one symbol to represent three.
HAC 4 - use one symbol to represent five.
HAC 5 - use one symbol to represent seven.
HAC 6 - use one symbol to represent eight.
HAC 7 - 9 - (a) use most seaward platforms only (b) include all platforms seaward of the 30 meter depth curve (2E010).
Thinning hierarchy by order of omission:
(1) CHA=023
(2) CHA=023, NAM, SST
(3) CHA=023, NST=010
(4) CHA=023, NAM, NST=010, SST
(5) CHA=021
(6) CHA=021, NAM, SST
(7) CHA 021, NST=010
(8) CHA 021, NAM, NST=010, SST
Thin #1 first, #2 second, etc, if they are all #8 select those around the perimeter to help define the limits of the field.

REEF...2D120 (AREA)

D-1910 If rock symbol (point 2D130) is shown inside a reef symbol (area 2D120) overprints the shoreline (2A010 or 2H075), displace the rock symbol seaward, so that it no longer overprints the shoreline. If necessary, displace the dotted perimeter line of the reef seaward, so it does not overprint the rock symbol.

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol ~ 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:
Hydro
power
plant

L-4807 Type shall be placed in the following preference:
(a) Placed on one horizontal line centered in feature.
(b) Broken into multiple horizontal lines, centered in feature, with a 1 mm space between lines.
(c) Placed on one line outside feature. Use Rule L-4722 for placement. If present, HDP shall always be positioned inside area.
(d) Placed on two lines to avoid overprints. Use Rule L-4722 for placement. If present, HDP shall always be placed inside area.

FEATURE: REEF...2D120 (AREA)

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

L-4809 When two or more identical features fall within 10 mm of each other, one legend with plural description shall be shown, with type placed as close as possible to the center of the group without overprinting features.

L-4811 The drying height (HDH) shall be shown if it is known, for reefs that uncover (2D120, VRC=008). Type shall be placed over the highest point of the reef, if possible. If the reef is too small to place HDH inside the area, it shall be placed alongside the area in parentheses. If "Co" is required by symbol, MCP=019, type shall be positioned under HDH.

L-4813 Descriptive terms, e.g., "Canal" shall be shown if the name is not known. If the descriptive word appears in the name, for example, "PANAMA CANAL", the descriptive type shall not be shown, i.e., do not show "Panama Canal Canal".

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

R-2210 Rocks (2D130, MCP=066) and isolated coral heads (2D130, MCP=019) within submerged reefs (2D120) shall be charted using the appropriate rock symbol. When depths over selected rocks are shown, an overall depth over the reef is not required, since the depth over the reef is shown by the depth of the shallowest rock. Where it is not possible to chart depth information for separate rocks, the shallowest depth over the reef shall be shown by HDP or HDH on reef (2D120).

R-2215 Symbol consists of arcs and Vs along the area perimeter. If the reef edge symbol overprints the shoreline, the symbol is deleted for that section that overprints.

R-2221 HGT is used to describe height when feature is above the surface of the water at High Water (VRC=001). HDI is not applicable when VRC=001.
HDI values 000, 009, 010, 011, 012 are used to describe knowledge about a depth of a feature when the feature is below the water surface (VRC=004).
HDI values 013 and 014 are used to describe knowledge about the drying height of a feature when it covers and uncovers, i.e., between high and low water (VRC=008).
HDP is used to record the depth of a feature when HDI=009, 010 or 011. HDP is not applicable when the depth is unknown (HDI=000 or 012) or when the feature covers and uncovers (VRC=008) - see HDH, or when the feature is above High Water (VRC=001).
HDH is used to record the drying height of a feature when HDI=013. HDH is not applicable when the drying height is unknown (HDI=014), or the feature is below water (VRC=004) - see HDP, or when the feature is above High Water (VRC=001).

FEATURE: REEF...2D120 (AREA)

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2802 Where symbols with the same feature code but different values of VRC are adjacent to each other, the boundary of the feature that is the highest in the vertical plane shall be shown, and the boundary of the feature that is lower shall be deleted. For example, the feature above water is shown whole, while the feature that covers and uncovers has that portion of its symbol perimeter that overprints the higher feature deleted

R-2806 If areas where separate dangers coalesce because of scale, the danger curves (dotted lines) are deleted except for those on the outermost perimeter of the aggregate danger hazard. A smooth dotted line is drawn around the area.

R-2915 The minimum size of a reef (2D120) that covers and uncovers (VRC=008) shall be 2 mm diameter. The minimum size of a reef that is under water (VRC=004) shall be 3 mm. If the reef at chart scale is smaller than these minimum sizes, it shall be shown as a rock (2D130).

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

R-9040 If a hole exists inside of an area feature, and the width of the hole is greater than 3 mm at chart scale, the hole is shown as an open space inside the surrounding feature. If the hole is 3 mm wide or less, the hole is deleted and absorbed into the surrounding area feature.

ROCK...2D130 (POINT)

D-1909 If point symbol overprints shoreline (2A010 or 2H075), the HDP type, posicut, or graphic in the center of symbol shall be displaced seaward until they no longer overprint the shoreline. If the danger curve (dotted perimeter line) overprints the shoreline, that portion of the dotted perimeter line falling on land shall be deleted.

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

FEATURE: ROCK...2D130 (POINT)

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:
Hydro
power
plant

L-4763 The MCP label for rock (MCP=066) shall be "R", and the label for coral (MCP=019) shall be "Co" Labels are shown without quote marks, or periods.

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

L-4872 HDP label shall be centered in the circle.

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

R-2210 Rocks (2D130, MCP=066) and isolated coral heads (2D130, MCP=019) within submerged reefs (2D120) shall be charted using the appropriate rock symbol. When depths over selected rocks are shown, an overall depth over the reef is not required, since the depth over the reef is shown by the depth of the shallowest rock. Where it is not possible to chart depth information for separate rocks, the shallowest depth over the reef shall be shown by HDP or HDH on reef (2D120).

R-2221 HGT is used to describe height when feature is above the surface of the water at High Water (VRC=001). HDI is not applicable when VRC=001.
HDI values 000, 009, 010, 011, 012 are used to describe knowledge about a depth of a feature when the feature is below the water surface (VRC=004).
HDI values 013 and 014 are used to describe knowledge about the drying height of a feature when it covers and uncovers, i.e., between high and low water (VRC=008).
HDP is used to record the depth of a feature when HDI=009, 010 or 011. HDP is not applicable when the depth is unknown (HDI=000 or 012) or when the feature covers and uncovers (VRC=008) - see HDH, or when the feature is above High Water (VRC=001).
HDH is used to record the drying height of a feature when HDI=013. HDH is not applicable when the drying height is unknown (HDI=014), or the feature is below water (VRC=004) - see HDP, or when the feature is above High Water (VRC=001).

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

FEATURE: ROCK...2D130 (POINT)

R-2294 Submerged rocks (2D120, VRC=004) with known depths (HDI=009 or 010) of 30.0 meters or less are considered dangerous (SOH=001) if the depth (HDP) of the rock is shallower than the corresponding depth area, as defined by the adjacent depth curves. They are considered not dangerous (SOH=002) if the depth of the rock falls within the corresponding depth area. For example, on a chart showing 10, 20, and 30 meter depth curves, a rock with a depth of12.0 meters would be considered dangerous (SOH=001) if it fell in between the 20 and 30 meter depth curves, but would be considered not dangerous (SOH=002) if it fell between the 10 and 20 meter depth curves.

R-2806 If areas where separate dangers coalesce because of scale, the danger curves (dotted lines) are deleted except for those on the outermost perimeter of the aggregate danger hazard. A smooth dotted line is drawn around the area.

R-2916 Dangers with danger curves (dotted lines) around them which fall inside other danger areas with danger curves around them, shall have the inner dotted line deleted.

R-3707 If an uncovering rock (2D130, VRC=008) falls inside the foreshore (2A020), show the rock center symbol without the blue tint or dotted circle.

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

R-3709 The diameter of the circular symbol perimeter line may be reduced in congested areas to avoid overprinting other symbols, but must be at least 2.0 mm diameter, and cannot come closer than 0.2 mm to any type or graphic symbol shown inside the circle. In non-congested areas the normal symbol diameter shall be shown.

T-0836 When central graphic symbols of hydrographic dangers, excluding the danger curve (dotted line) overprint or coalesce, they shall be thinned, with preference given to retaining those dangers with the shallower depth (HDP), if it is known. Danger curves shall not be affected by this rule.

SNAG /STUMP...2D140 (AREA)

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4729 If symbols overprint each other, labels are condensed as follows:
(1) If the labels are identical, only one is retained.
(2) If the labels are not identical, they shall be condensed in to one legend, e.g., "Fishhaven and Well". If multiple depths are shown, only the shallowest is retained.

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:
Hydro
power
plant

FEATURE: SNAG /STUMP...2D140 (AREA)

L-4807 Type shall be placed in the following preference:
(a) Placed on one horizontal line centered in feature.
(b) Broken into multiple horizontal lines, centered in feature, with a 1 mm space between lines.
(c) Placed on one line outside feature. Use Rule L-4722 for placement. If present, HDP shall always be positioned inside area.
(d) Placed on two lines to avoid overprints. Use Rule L-4722 for placement. If present, HDP shall always be placed inside area.

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

L-4809 When two or more identical features fall within 10 mm of each other, one legend with plural description shall be shown, with type placed as close as possible to the center of the group without overprinting features.

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

R-2914 Features shown as points on cartographic source material shall be shown as points, except as follows: If more than five point symbols fall inside an area of 1 square centimeter at product scale, show as an area symbol, labeled, and with a smooth danger curve (dotted line) around them. If any of the point features extend above High Water (VRC=001), show area symbol as above surface (VRC=001). IF no point features are above the surface at High Water, show area symbol as submerged (VRC=004).

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

SNAG /STUMP...2D140 (POINT)

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

FEATURE: SNAG /STUMP...2D140 (POINT)

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:
Hydro
power
plant

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

L-4809 When two or more identical features fall within 10 mm of each other, one legend with plural description shall be shown, with type placed as close as possible to the center of the group without overprinting features.

L-4872 HDP label shall be centered in the circle.

L-4891 Variable type size for HDP values enclosed by danger curves (dotted circles): If HDP < 10, (a single digit principal digit), apply 7 point type to the principal digit, and 5 point type to the subscript, if there is one. If HDP >= 10 (a double digit principal digit), apply 6 point type to the principal digit, and 5 point type to the subsript, if there is one.

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

R-2221 HGT is used to describe height when feature is above the surface of the water at High Water (VRC=001). HDI is not applicable when VRC=001.
HDI values 000, 009, 010, 011, 012 are used to describe knowledge about a depth of a feature when the feature is below the water surface (VRC=004).
HDI values 013 and 014 are used to describe knowledge about the drying height of a feature when it covers and uncovers, i.e., between high and low water (VRC=008).
HDP is used to record the depth of a feature when HDI=009, 010 or 011. HDP is not applicable when the depth is unknown (HDI=000 or 012) or when the feature covers and uncovers (VRC=008) - see HDH, or when the feature is above High Water (VRC=001).
HDH is used to record the drying height of a feature when HDI=013. HDH is not applicable when the drying height is unknown (HDI=014), or the feature is below water (VRC=004) - see HDP, or when the feature is above High Water (VRC=001).

FEATURE: *SNAG /STUMP...2D140 (POINT)*

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, *VDC is not applicable.* VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2914 Features shown as points on cartographic source material shall be shown as points, except as follows: If more than five point symbols fall inside an area of 1 square centimeter at product scale, show as an area symbol, labeled, and with a smooth danger curve (dotted line) around them. If any of the point features extend above High Water (VRC=001), show area symbol as above surface (VRC=001). IF no point features are above the surface at High Water, show area symbol as submerged (VRC=004).

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

R-3709 The diameter of the circular symbol perimeter line may be reduced in congested areas to avoid overprinting other symbols, but must be at least 2.0 mm diameter, and cannot come closer than 0.2 mm to any type or graphic symbol shown inside the circle. In non-congested areas the normal symbol diameter shall be shown.

WRECK...2D180 (POINT)

D-1900 If two graphic interior point symbols (HDI=012 and SOH=001) or (VRC=001 or 008, and EPA=001, 002 or 005) overprint, displace both symbols outward until they no longer overprint.

D-1909 If point symbol overprints shoreline (2A010 or 2H075), the HDP type, posicut, or graphic in the center of symbol shall be displaced seaward until they no longer overprint the shoreline. If the danger curve (dotted perimeter line) overprints the shoreline, that portion of the dotted perimeter line falling on land shall be deleted.

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4729 If symbols overprint each other, labels are condensed as follows:
(1) If the labels are identical, only one is retained.
(2) If the labels are not identical, they shall be condensed in to one legend, e.g., "Fishhaven and Well". If multiple depths are shown, only the shallowest is retained.

FEATURE: WRECK...2D180 (POINT)

L-4730 Labels may be stacked, readable top to bottom to avoid overprints, e.g.:
Hydro
power
plant

L-4808 Labels shall be placed in water area, and shall not overprint the shoreline (2A010 or 2H075) or be placed on land or in the foreshore (2A020).

L-4809 When two or more identical features fall within 10 mm of each other, one legend with plural description shall be shown, with type placed as close as possible to the center of the group without overprinting features.

L-4872 HDP label shall be centered in the circle.

L-4891 Variable type size for HDP values enclosed by danger curves (dotted circles): If HDP < 10, (a single digit principal digit), apply 7 point type to the principal digit, and 5 point type to the subscript, if there is one. If HDP >= 10 (a double digit principal digit), apply 6 point type to the principal digit, and 5 point type to the subsript, if there is one.

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

R-2221 HGT is used to describe height when feature is above the surface of the water at High Water (VRC=001). HDI is not applicable when VRC=001.
HDI values 000, 009, 010, 011, 012 are used to describe knowledge about a depth of a feature when the feature is below the water surface (VRC=004).
HDI values 013 and 014 are used to describe knowledge about the drying height of a feature when it covers and uncovers, i.e., between high and low water (VRC=008).
HDP is used to record the depth of a feature when HDI=009, 010 or 011. HDP is not applicable when the depth is unknown (HDI=000 or 012) or when the feature covers and uncovers (VRC=008) - see HDH, or when the feature is above High Water (VRC=001).
HDH is used to record the drying height of a feature when HDI=013. HDH is not applicable when the drying height is unknown (HDI=014), or the feature is below water (VRC=004) - see HDP, or when the feature is above High Water (VRC=001).

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2806 If areas where separate dangers coalesce because of scale, the danger curves (dotted lines) are deleted except for those on the outermost perimeter of the aggregate danger hazard. A smooth dotted line is drawn around the area.

FEATURE: WRECK...2D180 (POINT)

R-2916 Dangers with danger curves (dotted lines) around them which fall inside other danger areas with danger curves around them, shall have the inner dotted line deleted.

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

R-3709 The diameter of the circular symbol perimeter line may be reduced in congested areas to avoid overprinting other symbols, but must be at least 2.0 mm diameter, and cannot come closer than 0.2 mm to any type or graphic symbol shown inside the circle. In non-congested areas the normal symbol diameter shall be shown.

S-1400 When two or more stranded wreck symbols (2D180, EPA=003 or 004) overlap, one symbol shall be placed in the center of the group and shall be labeled with the number of stranded wrecks in the group, e.g., "2 Wrecks", "3 Wrecks", etc. Type is Swiss 742 italic, 6 point, in color Black SPC-58600.

T-0801 If more than five wrecks (2D180), other than stranded (VRC=001 or 008), fall within an area less than 20 mm x 20 mm, individual wreck symbols are not shown. Instead, a generalized danger line (dotted line) shall be shown surrounding the area, and the area shall be labeled as follows: "Numerous wrecks", "Numerous Wks", "Wks" Condense label as necessary to place it inside the danger line. Type is Swiss 742, 6 point upper and lower case italic, in color Black SPC-58600.

T-0810 Where two or more wrecks (2D180), except stranded wrecks (VRC=001 or 008), overprint each other:
(1) If only the danger lines (dotted lines) overprint, delete the danger lines that are inside the outer perimeter danger lines.
(2) If two HDP depths overprint, retain the shallowest depth and the danger line surrounding the wrecks.

DEPTH CURVE...2E010 (LINE)

L-4733 Depth curves (2E010) shall be labeled with the numeral in the same unit of measurement as the soundings (2E010). The term "meters" shall not be part of the label.

L-4734 Depth Curve (2E010) labels:
(1) Break curve the width of the label plus 1 mm on each side. Orient label parallel to curve, centered in window, readable left to right, or bottom to top, if curve is vertical.
(2) Start labels at the middle of the curve, space every 12 cm. Labels may be moved any distance to avoid overprints, except on a closed curve where an overprint cannot be avoided. If the overprint is another Depth Curve, break the curve. Label every curve at least once if length of curve is 10 mm greater than window and does not close.

L-4776 Depth curves (2E010) which surround a single sounding (2E020) shall not be labeled if the length of the depth curve is less than 20 mm.

O-3407 An inset plan covering an area within a chart is screened to the same depth curve as that used on the chart, regardless of the scale of the plan.

O-3408 When accurate depth curves (2E010, ACC=001) taken directly from source charts are shown on a product that has been enlarged by a factor greater than two, compared to the scale of the source chart, e.g., 1:50,000 source on a product larger than 1:25,000, the depth curve's accuracy shall be ACC=002. When approximate depth curves (2E010, ACC=002) taken directly from source charts are shown on a product that has been reduced by a factor greater than two compared to the source source chart, e.g., 1:50,000 source on a product smaller than 1:100,000, the depth curve accuracy shall be ACC=001. When depth curves taken from source charts are enlarged or reduced by a factor equal to or less than two, they shall retain the same accuracy as the source chart.

FEATURE: DEPTH CURVE...2E010 (LINE)

O-3421 If other curves are selected for portrayal (based on published source material), use the CRV values that are equal to the values of the curves on the source material.

O-3435 The depth curve (2E010) to which a blue water tint is shown is established by a representation rule. If for some reason this specified depth curve is not the curve most significant for navigation in the area, the cartographer shall select the depth curve most significant for navigation, and use that depth curve for blue water tint portrayal.

In some instances, it may be desirable to show two water tints, for example, a Blue 31% tint from the shoreline to the 20 meter depth curve, and a Blue 12% tint from the 20 meter depth curve to the 30 meter depth curve. In this case, a SPC-48253 Blue 31% 45° angle screen is used for the darker tint, and a SPC-48253 Blue 12% 75° angle screen is used for the lighter tint.

When using open window negatives for printing, extending the 12% Blue open window from the second significant depth curve all the way to the shoreline, rather than just to the darker blue tint, will eliminate the potential for a white halo where the two blue screens meet, if registration is not exact.

R-2201 The depth curve (2E010) to which water tint is shown may be interpolated from soundings shown on nautical chart sources in order to develop the required open water blue tint. If this is done the curve shall be approximate (ACC=002). For depth curves other than this curve, Rule R-2876 shall apply.

R-2812 In delineating depth curves (2E010), the line shall be positioned as near as possible to the deeper side of the sounding value without touching. The depth curve shall not be broken for the Sounding value.

R-2813 Depth curves (2E010) that coalesce on steep slopes shall show only the deepest and shoalest curves. Where space is limited in "steep to channels" portrayal of the deepest curve is preferred. In other general areas where space is limited because of scale, the shoalest curve shall be shown with the deep curves broken. Where a blue tint invades a steep slope, the curve delimiting the blue tint must be shown.

R-2814 Small depressions within shallow areas shall not be surrounded by a depth curve (2E010) if less than three soundings (2E020) fall within the curve.

R-2827 When published nautical charts in meters are used as source material for DMA charts, the DMA charts shall retain the depth curves (2E010) shown on the published chart source. Occasionally foreign sources will portray soundings(2E020) which are the same value as the depth curve seaward of the depth curve. In this event, the depth curve is broken and a dashed approximate curve (2E010, ACC=002) is extended seaward around the sounding(s).

R-2828 Foreign charts showing soundings and depth curves in fathoms, that are used as source material for nautical charts, shall have the sounding converted to meters, and have the depth curves converted to meters as follows:

-1 fathom curve shall be retained, and labeled 2
-3 fathom curve shall be retained, and labeled 5.

This policy shall be followed only when the soundings seaward of the curve are greater than the value of the curve. When the above conversion is not practical, an approximate depth curve (2E010, ACC=002) shall be delineated and dashed (approximate) lines displayed. Indefinite (approximate) depth curves shall replace fathom curves of depths other than above.

R-2869 Show water tint (Blue SPC-48253, 31% screen, at 45°) from the shoreline (2A010 or 2H075), to the 10 meter depth curve (2E010, CRV=010) and all offshore areas shallower than 10 meters (inside a 10 meter depth curve). Blue tint is deleted from inland hydrographic features (2H), in those areas that are deeper than 10 meters (outside the 10 meter depth curve).

FEATURE: DEPTH CURVE...2E010 (LINE)

R-2871 Charts in areas recognized as likely routes for supertankers (draft of 18 - 28 meters) shall show water tint from the shoreline (2A010 or 2H075) to the 30 meter depth curve (2E010, CRV=030) and all offshore areas inside the 30 meter depth curve. Shipping routes for supertankers are indicated in the IMO Publication Ship's Routeing Manual - Part C "Deep Water Routes", and DMA Sailing Directions.
To further emphasize dangers existing for ships with drafts up to 30 meters, depths of less than 30 meters seaward of the 30 meters depth curve shall carry a blue screen, e.g., single sounding or several soundings in an area. Areas deeper than 30 meters shall not show blue tint.

R-2874 If the shoal sounding (2E020) and selected depth curves (2E010) will adequately portray a danger, it is not necessary for the complete sequence of depth curves to be shown around an isolated pinnacle.

R-2875 Accurate depth curves (2E010, ACC=001) shall be shown when the sounding data from which they are interpolated has a density of <= 10 mm maximum spacing, at the product chart scale before soundings have been thinned. When this sounding density is > 10 mm maximum spacing, any interpolated depth curves shall be approximate (ACC=002).

R-2876 In areas of the chart where the primary source of hydrographic data is a foreign nautical chart, and that foreign chart does not show any depth curves, depth curves (2E010) shall not be interpolated, and soundings (2E020) alone shall be used to depict the bottom topography.

R-2882 In rapidly changing areas where surveys with different dates adjoin but do not agree, gaps in depth curves (2E010) shall be left to indicate data discrepancy to the user. Gap width shall be commensurate with chart scale and the area covered by the sources.

SOUNDING...2E020 (POINT)

D-1903 Soundings shall normally be plotted in their true positions. If a selected sounding overprints other important detail, such as aids to navigation (2C) or dangers (2D), a different sounding is selected, if possible. If the selected sounding is the shallower than any other sounding around it, it must be shown. In this case, it is shown as an "out of position" sounding and a leader line is used to show the true position of the sounding. Leader line shall be 3-25 mm in length.

D-1912 Soundings (2E020) shall be displaced seaward when they overprint the shoreline (2A010 or 2H075) until they no longer overprint.

D-1913 If a channel (deep area between two shallow areas) is too narrow to place a sounding (2E020) in, and the sounding is the shallowest depth in the channel between the two shallow areas, place the sounding alongside the channel, in parentheses.

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4710 Strings of windows shall be placed on one line, reading left to right, or bottom to top if the axis is vertical.

L-4711 Strings of windows may be placed on two lines to avoid overprints.

FEATURE: SOUNDING...2E020 (POINT)

O-3403 If soundings (2E020) shown on a DMA product chart are taken from a graphic source chart/survey that has been enlarged by a factor greater than two, for example, soundings on a 1:50,000 source chart shown on a DMA chart at a scale larger than 1:25,000, then those soundings shall be shown as slant soundings (SND=001 shall be shown as SND=008, SND=002 shall be shown as SND=009, SND=006 shall be shown as SND=004, and SND=007 shall be shown as SND=010).

When this override occurs, the chart shall show the following note, wording as appropriate, in the margin of the chart. See "Notes and Cautions" section of product specification for information regarding note portrayal.

NOTE
Soundings in slant figures are from smaller scale charts.

O-3405 Some foreign charting agencies (and the IHO standard) use vertical (upright hairline) type for questionable soundings and slant type for normal soundings. This is the opposite of what DMA and NOS show on U.S. charts. When a sounding (2E020) is shown as a slant type sounding on a source, but that source was produced by a charting agency that uses slanted type to show normal soundings, the sounding type on the DMA chart shall be vertical, i.e., SND=006 (Ordinary), SND=001 (Drying Height-Vertical), SND=002 (No Bottom-Vertical), or SND=007 (Doubtful-Vertical).

O-3406 Sounding data that is unreliable, based on notes or cautions on the source material, or some other information known to the compiler, shall be attributed to show slanted or italic type (2E020, SND=004, 008, 009, or 010), depending on the type of sounding. A note explaining the reason for the slant soundings shall be given in the margin or land area. See "Notes and Cautions" section of product specifications.

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

O-3438 If a chart shows a mixture of soundings (2E020) from different sources that utilize different vertical (sounding/hydrographic) datums, the sounding datum quoted in the margin of the chart shall be the highest of the datums used.

R-2207 Soundings (2E020) that are 200 meters deep or deeper shall be corrected for sound velocity using NP-139 Tables (SVC=003). Sound velocity measurements (SVC=004) shall be used in place of NP-139 Tables if they are considered more reliable than the averaged values shown in the NP-139 Tables. Soundings that are less than 200 meters deep shall be corrected for sound velocity using sound velocity measurements (SVC=004) if data is available. If it is not possible to correct soundings for sound velocity, and assumed speeds of sound are used (SVC=000, 001 or 002), uncorrected soundings are identified in the source diagram.

FEATURE: SOUNDING...2E020 (POINT)

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2224 HDH is used when SND=001 (Drying Height), or 008 (Drying Height (Slant)). HDP is used for all other values of SND.

R-2807 The rounding off of decimeters between 21 and 30.5 meters shall be as follows:
Decimeters between 3 and 7 shall be shown as 5, e.g., depths from 21.3 through 21.7 shall be shown as 21.5. Decimeters 1, 2, 8, and 9, shall be rounded off to the nearest meter, e.g., 21.1 and 21.2 shall be shown as 21, and 21.8 and 21.9 shall be shown as 22.

R-2860 Sounding density shall be greatest (6 mm - 15 mm average spacing) between the shoreline (2A010 or 2H075) and the 20 meter depth curve (2E010, CRV=020, UNI=013). In areas outside the 20 meter depth curve, sounding density shall be in accordance with Rule T-0822.

R-2864 Areas with soundings shallower than the depth range of maximum density that are not contiguous to the shoreline shall show a sounding density of <= 10 mm average spacing.

R-2865 In well surveyed areas, where sounding density on the source is <= 5 mm average spacing, sounding density shall be > 20 mm average spacing and depth curves (2E010) relied on to portray the bottom topography.

R-2867 In areas where depth information is inadequate on large scale charts, small scale charts of the same areas shall show a markedly uneven spacing for soundings.

R-2908 The position of a sounding (2E020) on a DMA or NOS chart is the center of mass of the principal digit, excluding the subscript. Soundings on foreign source material do not necessarily show the center of mass of the principal digit as the position of the sounding. The standard practice of the charting authority that produced the source shall be followed to determine the position of the sounding on the foreign source.

R-9011 CONTROLLING DEPTHS OF CHANNELS: A sounding (2E020) shall be shown to indicate the controlling depth of a natural channel. The controlling depth of a channel is the least depth in the shallowest part of a natural channel, analoguos to the highest point in a pass between two mountains.

R-9012 DEEPEST PATH ALONG A NATURAL CHANNEL: A line of soundings (2E020) is shown to indicate the deepest water through a natural channel, analogous to the lowest part of a valley floor.

R-9013 SOUNDINGS ALONG TRACKS AND ROUTES: A line of soundings (2E020) should be shown along tracks that ships must follow, such as a leading line (2C040), radar guided track (6C130), or route (6C165). If no soundings exits directly along the track, the closest ones shall be shown.

R-9014 DEEPS: Deep soundings (2E020) should be shown. Deep are local lows; soundings that are deeper than surrounding soundings. Soundings that are approximately 20% or more deeper than the surrounding soundings are considered important. Soundings between 10% and 20% deeper than surrounding soundings may be important, depending on the characteristics of the bottom, for example, in flat areas.

R-9015 SOUNDINGS AT CHANGES IN SLOPE: Soundings (2E020) shall be shown to indicate significant changes of slope of the bottom. Soundings that are more than 5% shallower than the surface interpolated from surrounding shoals, deeps, depth curves (2E010), and other soundings (2E020), should be shown. Soundings that are more than 10% deeper than the surface interpolated from surrounding shoals, deeps, depth curves and other soundings should also be shown.

FEATURE: SOUNDING...2E020 (POINT)

R-9016 SOUNDINGS NEAR DEPTH CURVES: Soundings (2E020) shown close to depth curves (2E010), i.e., closer than 25 mm, serve to support the depth curve, especially when there is no depth curve label nearby, or for short depth curves that do not have a label. Depth curves (2E010) showing long, narrow extentions of deeper water into shallow water from the depth curve's normal smoothed curve should be supported by soundings along and near the end of the extension, if there is space, without soundings overprinting depth curves.

R-9018 SOUNDINGS IN DANGEROUS AREAS: As scale is reduced from the source to the product chart, soundings (2E020) may be omitted between groups of rocks (2D130) or reefs (2D120), when there is no well defined passage between them, or if detail has been generalized in the area. Where there is a well defined passage through the dangerous area, soundings should be shown.

R-9019 SOUNDINGS CLOSE TO AND THE SAME VALUE AS A DEPTH CURVE: Soundings (2E020) that are the same value of the depth curve (2E010) on the shallow side of the curve, and soundings that are only one unit (fathom or meter) deeper than the curve and shown on the deeper side of the depth curve, should not be shown if they are closer than 3 mm to the depth curve, because they do not contribute any useful information to the mariner.

R-9020 NO BOTTOM SOUNDINGS: No bottom soundings (2E020, SND=002) should be shown only if no other sounding data is available within 30 mm at chart scale.

R-9021 Fill soundings (2E020) shall be shown in flat or deep areas between shoals. Fill soundings are shown in a somewhat regular pattern of less dense (15 to 30 mm spacing) soundings that do not have significant changes in slope.

R-9022 Soundings 2E020 that are the least depths in proximity to known or potential navigational routes are placed very close together to increase the amount of detail presented to the chart user. They should not generally be placed closer than about 6 mm at chart scale.

R-9023 Soundings (2E020) in shoal areas, natural channels and hazardous areas should be sufficiently close together so these areas are highlighted by a dense pattern of soundings. Sounding spacing should be 10 to 15 mm. Soundings around a shoal should be less than 10 mm spacing.

R-9024 In areas where depth curves (2E010) are less than 10 mm apart, the number of soundings (2E020) should be reduced, because the function of showing the shape of the bottom has been taken over by the depth curves. Significant deviations (5% higher or 10% lower) from the slope indicated by the depth curves must still be shown by soundings.

R-9025 A least depth sounding (2E020) must be shown for each shoal on the chart. When selecting soundings from larger scale source for inclusion on a smaller scale product, it may become necessary to generalize a series of shoals into one shoal. When this is required, the shallowest sounding from the group is selected to represent the least depth over the generalized shoal.

R-9026 If two adjacent shoal soundings (2E020) have the same depth (HDP), the one shown first is the one closest to the nearest or most prominent navigational route.

R-9027 For any group of soundings (2E020) with equal depth values (HDP), the most seaward one is shown. The most seaward sounding is the one closest to the deeper depth curve (2E010), or closest to the next deeper sounding.

R-9028 If two shoal soundings (2E020) of equal depth (HDP) are found in an isolated shoal area (shallow area surrounded by a depth curve that closes on itself), the farthest seaward of equal shoal soundings must be shown.

R-9029 If a shoal sounding (2E020) is at the same depth as a depth curve (HDP of 2E020 = CRV of 2E010), the depth curve is shown around the sounding. If two or more soundings have the same depth as the depth curve, the curve is shown around all of them. Additional deeper soundings at 10 or 15 mm spacing are shown outside the depth curve to indicate the slope of the sea bottom around the shoal.

FEATURE: SOUNDING...2E020 (POINT)

R-9030 Deep soundings (2E020) that are shown, but not surrounded by a depth curve (2E010), should be surrounded by a group of irregularly spaced soundings. Soundings shown around deeps should be spaced at a greater distance than for a comparably sized shoal, i.e., 15 to 20 mm.

R-9031 The structure of natural channels should be shown by a pattern of soundings (2E020) with enough density to delineate both the width and the depth of the navigable portion. Selected soundings must be the least depth in the immediate area they are to represent.

R-9032 When soundings (2E020) from a recent survey reveal that a satisfactory junction between the new data and existing data cannot be made, a blank band approximately 5 mm wide at chart scale should be left around the limits of the more recent survey. A note should be shown stating that hydrography is from an older survey. Example: "Hydrography to eastward is from surveys in 1934"

R-9033 All hydrographic detail may be removed from certain areas undergoing continual and rapid change, such as ocean inlets and openings between barrier islands if showing soundings (2E020) is considered to present an unsafe representation between chart editions. The area shall be tinted with blue tint (see Rules R-2869 to R-2871 as applicable to the specific product). A note should be shown stating that hydrography is under continual change: for example: "Area of continuous change"

R-9036 SHOALS: All shoal soundings (2E020) must be shown. A shoal sounding is a local high; a sounding that is shallower than any other sounding around it. Shoal soundings may be placed very close together, but generally not less than 6 mm spacing. The density of soundings shown around shoals should be increased to less than 15mm spacing, so the increased density of soundings draw attention to the presence of the shoal.

T-0822 Soundings (2E020) are thinned according to the following hierarchy. Those soundings at the top of the list are deleted last, and those soundings at the bottom of the list are deleted first. See the referenced representation rules for more information about each category of sounding.

1. Controlling depths (see R-9011)
2. The deepest path along a navigable channel (see R-9012)
3. Soundings along tracks and routes (see R-9013)
4. *Deeps (see R-9014)*
5. Soundings at changes of slopes (see R-9015)
6. Soundings supporting depth curves (see R-9016)
7. Soundings in slips and around piers (see R-9017)
8. Soundings other than 1-7 above
9. Soundings inside dangerous areas (see R-9018)
10. Soundings close to and the same value as a depth curve (see R-9019)
11. No bottom soundings (see R-9020)

T-0823 Soundings (2E020) shown on smaller scale charts in an area shall be a subset selected from those soundings shown on larger scale charts in the area.

BOTTOM CHARACTERISTICS...2F010 (POINT)

FEATURE: BOTTOM CHARACTERISTICS...2F010 (POINT)

L-4701 Abbreviations for Bottom Characteristics are:

For the material (MCP, MCS, MCU)

000-Unknown no abbreviation, drop window if material is unknown or not present.

001-Ash Ash
006-Boulders Bo
011-Chalk Ck
012-Cinders Cn
013-Cirripedia Cir
014-Clay Cy
016-Cobble Cb
019-Coral Co
020-Coral Head Co Hd
022-Diatoms Di
027-Foraminifera Fr
028-Fucus Fu
033-Globigerina Gl
034-Grass Grs
035-Gravel G
037-Ground Gd
043-Lava Lv
045-Madrepores Md
046-Manganese Mn
047-Marl Ml
049-Mattes Ma
052-Mud M
053-Mussels Ms
055-Ooze Oz
056-Oysters Oy
058-Pebbles P
059-Polyzoa Po
061-Pteropods Pt
062-Pumice Pm
063-Quartz Qz
064-Radiolaria Rd
066-Rock R
069-Sand S
070-Schist Sch
071-Scoria Sc
072-Sea Tangle Stg
073-Seaweed Wd
074-Shells Sh
075-Shingles Sn
076-Silt Si
081-Spicules Spi
082-Sponge Sp
086-Stones St
090-Tufa T

For the characteristic of the material (MCC, CSM, UMC)

000-unknown no abbreviation, drop window when material characteristic is unknown.

009-broken bk
010-calcareous ca
015-coarse c
021-decayed dec
025-fine f
026-flinty fly
032-glacial ga
036-gritty gty
038-ground grd
039-hard h
042-large l
066-rocky rky
067-rotten rt
078-small sm
079-soft so
080-speckled spk
084-sticky sy

FEATURE: BOTTOM CHARACTERISTICS...2F010 (POINT)

085-stiff	sf
087-streaky	str
089-tenacious	ten
091-uneven	unev
093-varied	vard
094-volcanic	v
100-medium	m

If UMC=000 and MCU=000, delete the slash between MCS and UMC.

L-4706 If the attribute value is not known, or the attribute value for none or not applicable, delete window and condense remaining windows.

L-4784 String of windows shall be placed horizontally on one line.

R-2282 The mobile bottom (2F010, MCC=051) sand wave symbol should be used primarily in close association with the most significant soundings (2E020), usually the shallowest sounding in each area of mobile bottom/sand waves area. The use of the sandwave symbol draws attention to the most significant depths, and also indicates the degree of unreliability of the figure charted.

R-2283 When frequently repeated surveys show some variation in least depth soundings (2E020) within areas of sandwaves (2F010, MCC=051), the shallowest one found over a period of years should be charted. This blending of details of surveys from different dates must be carried out with care; In particular, long term deepening over time must not be overlooked.

R-2284 The extent of mobile bottom/sandwave areas (2F010, MCC=051), if know and considered navigationally significant, may be indicated by the legend 'Sandwaves' The legend should be placed over areas where the depths may be critical to surface navigation, and used in conjunction with the sandwave symbol associated with the most significant soundings. Type style for the legend is 6 point U/L italic. Color is Black SPC-58600 solid.

R-2285 Areas of sandwave/mobile bottom (2F010, MCC=051) shown on the chart are further explained by the following Caution, shown in the margin. See Notes and Cautions section of product specifications.

CAUTION
Sandwaves build up during particular states of weather and tide. Surveys may not have been made in those conditions, so the chart may not show the minimum depths possible.

R-2815 A particular bottom characteristic (2F010) should not be deleted unless it is the same as one within 50 mm. A particular bottom characteristic shall be deleted if it is the same as another bottom characteristic located within 50 mm of it. Bottom characteristics should not be displaced from their original positions just to show them below soundings. They may be displaced up to 5 mm from their original position to avoid overprinting other point symbols.

R-2883 Where the underlying material is known to differ from the surface layer, the symbol window string for the surface layer (MCC and MCP) and the symbol window string of the underlayer (UMC and MCU) shall be written in that order, on one line, separated by a slash '/'. If UMC or MCU is unknown, delete those window(s) and the slash.

R-2890 Where mixtures of materials occur, the symbol window string of the predominant material (MCC, MCP) shall be shown first, followed by the symbol window string of the secondary material (CSM, MCS), on one line, separated by a space. If no secondary material is present delete windows for CSM and MCS. If a third characteristic/material is present in the mixture, this is shown by the TXT label, using the standard abbreviations in rule L-4701; otherwise TXT is not shown.

R-2892 In water deeper than 100 meters, only show primary material composition (MCP) of bottom characteristics (2F010). Bottom characteristics shall be shown, if known, on all shoals and in anchorage areas (2B010). Elsewhere they shall be selected to show variations in the composition of the seabed. In uniform areas, bottom characteristics shall be shown at an approximately 50 mm interval, if data is available.

FEATURE: CURRENT ARROW /FLOW ARROW...2G010 (POINT)

CURRENT ARROW /FLOW ARROW...2G010 (POINT)

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4794 Current speed CRN or CRX shall be printed 1 mm above the line reading from left to right, or from bottom to top if arrow is vertical. When CRN and CRX are shown together, they are separated by a hyphen, e.g., 2.2 - 4.0 kn

R-2891 Arrow shall point in the direction of flow - DOF.

T-0828 Current arrows (CUR=001, 002, or 003) shall not be shown closer than 40 mm apart, unless the difference in DOF is greater than 45°, or difference in CRX is greater than 2 knots. *If arrows are thinned, the one with the* greatest CRX shall be retained.

TIDAL STREAM DATA POINT...2G030 (POINT)

R-2906 When tidal stream data is available from source charts, it shall be shown in the margin or land area of the chart. The point for which the data refers shall be shown by a tidal stream data point (2G030) symbol. The NAM attribute shall be used to associate a listing in the tidal stream table with a geographic position within the limits of the chart.

CURRENT DIAGRAM...2G040 (POINT)

L-4806 Labels shall be placed 1 mm away from the end of the arrows which point to the center point of the label type. Type shall be horizontal.

R-2808 The representation of current rates on current diagrams (2G040) is to make the length of the arrows proportional to the rate of current flow. The normal ratio is one nautical mile at chart scale for each knot of current flow rate. If this ratio is used, the following note is shown in the chart margin or land area (margin only on Combat Charts):

CURRENT DIAGRAM
The length of the arrow from the center of the circle represents the average current velocity for a given direction based on the ratio of one knot of current flow is equal to one nautical mile at the latitude of the current diagram.

If the current rate is fast enough, or the scale of the chart is large enough that any resulting arrow on any current diagram shown on the chart would be longer than 50 mm, a velocity scale is shown instead of the note specified above. The following note is shown:

CURRENT DIAGRAM
The length of the arrow from the center of the circle represents the average current velocity for a given direction based on the following scale.

(show scale under note)

The scale will be shown with the caution, to show the rate of the current, in 1/4 knot intervals. The length of the scale, and the lengths of each velocity arrow shown on the chart will be adjusted so that the longest velocity arrow shown on the chart is 50 mm long.

AQUEDUCT...2H010 (LINE)

L-4775 If attribute SHC and /or SOC is unknown or cannot be determined, omit window and associated /bounding lines.

L-4803 Label shall be on land, parallel to length of feature, 2 mm separation, readable left to right or bottom to top if feature is vertical.

FEATURE: AQUEDUCT...2H010 (LINE)

L-4804 The attribute SOC and the associated bars shall be positioned reading horizontal, in the following priority:
a. In the water, alongside the feature, without overprinting other hydrographic detail.
b. If necessary to avoid overprints, label may be placed on land, adjacent to the feature.

L-4818 The datum above which Safe Overhead Clearances (SOC) are given shall be a high water datum, preferably Mean High Water Springs (VDC=009) where the tide is appreciable. If the tide is not appreciable, i.e., less than 0.3 meter, Mean Sea Level (VDC=015) may be used. SOC shall be rounded down to the nearest whole meter, unless under 10 meters, where it is rounded down to the nearest meter and decimeter value.

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2744 Navigable water in the context of the OWO attribute is any open water (2A040), or inland hydrographic feature river/stream (2H140), lake/pond (2H080), or canal (2H020) that is required for port access (RPA=001).

R-2755 If the feature does not cross over navigable water, i.e., it is OWO=002, then the SOC and SHC attributes are not applicable.

CANAL...2H020 (AREA)

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4747 Type placement order of preference:
(1) Centered in area, parallel to longer of two axes, reading left to right, or bottom to top if longer axis of the feature is vertical.
(2) Shifted sideways to avoid overprints.
(3) Placed outside area parallel and 1 mm away from top boundary, reading left to right, or parallel to and 1 mm away from left boundary, reading bottom to top, if the major axis is vertical, centered with respect to the major axis.
(4) Shifted sideways to avoid overprints.
(5) Shifted up to avoid overprints, to a maximum distance of 6 mm.

L-4770 Labeling areas based on width:

Type Size:	If Width Is:
08 point	< 8 mm
10 point	>= 8 mm < 18 mm
12 point	>= 18 mm < 30 mm
14 point	>= 30 mm

Type is centered in area and repeated every 10 cm.

L-4813 Descriptive terms, e.g., "Canal" shall be shown if the name is not known. If the descriptive word appears in the name, for example, "PANAMA CANAL", the descriptive type shall not be shown, i.e., do not show "Panama Canal Canal".

L-4885 If the controlling depth (HDP) is unknown, delete the legend "Controlling Depth (HDP)m"

FEATURE: CANAL...2H020 (AREA)

R-2745 A river/stream (2H140), lake/pond (2H080) or canal (2H020) is required for port access (RPA=001) if it provides access by water to a port or other navigationally significant location for which DMA has an area requirement to chart. A river/stream (2H140), lake/pond (2H080) or canal (2H020) is not required for port access (RPA=002) if it is not used to provide access by water to a port or other navigationally significant location for which DMA has an area requirement to chart.

A lock (2I030) is RPA=001 if it is associated with a water body that is required for port access (RPA=001).

A rapids (2H120), waterfall (2H180), or dam (2I020) is an inland water obstruction (IWO=001) if it falls within a body of water that is required for port access (RPA=001). Otherwise, these features are not obstructions (IWO=002).

R-2747 Where area features transition to line features, for example, where an area river changes to a line river, the minimum width area symbol shall be tapered to a point so that it transitions smoothly into a line symbol.

R-2986 Symbol perimeter shall be broken where ship traffic enters and exits the feature. Feature boundary is symbolized only on those edges where ship traffic does not enter or exit the feature.

R-3673 Do not show land tint in the symbol. If attribute HYC is present, do not show land tint if HYC=008 (Perennial).

S-1500 Symbolize the casement portions (Left Bank / Right Bank) of the feature using the ACC and SLT attributes of the individual river or canal banks in conjunction with the inland shoreline (2H075) symbology. The AHC attribution of the inland shoreline (2H075) shall correspond to the HYC attribution of the associated water body as follows: HYC 008 = AHC 001, HYC 006 = AHC 002, and HYC 003 = AHC 003.

CANAL...2H020 (LINE)

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4885 If the controlling depth (HDP) is unknown, delete the legend "Controlling Depth (HDP)m"

R-2745 A river/stream (2H140), lake/pond (2H080) or canal (2H020) is required for port access (RPA=001) if it provides access by water to a port or other navigationally significant location for which DMA has an area requirement to chart. A river/stream (2H140), lake/pond (2H080) or canal (2H020) is not required for port access (RPA=002) if it is not used to provide access by water to a port or other navigationally significant location for which DMA has an area requirement to chart.

A lock (2I030) is RPA=001 if it is associated with a water body that is required for port access (RPA=001).

A rapids (2H120), waterfall (2H180), or dam (2I020) is an inland water obstruction (IWO=001) if it falls within a body of water that is required for port access (RPA=001). Otherwise, these features are not obstructions (IWO=002).

INLAND SHORELINE...2H075 (LINE)

D-7010 Shoreline (2A010 and 2H075) shall be broken for 0.2mm on each side of the following graphic elements:
1U040 Aircraft Facility Beacon, Posicut #199
2C030 Electronic Beacon, Posicut #92
2C050 Light, Posicut #199
2C055 Marker, rectangle
2C060 Visual Beacon, Posicut #85
Shoreline is not broken for other posicuts or labels associated with these symbols. Instead, type shall be placed either in the water or on land, so that it does not cross the shoreline.

FEATURE: INLAND SHORELINE...2H075 (LINE)

R-2739 Inland shoreline (2H075) shall only be included if its associated inland hydrographic feature is included on the product.

LAKE /POND...2H080 (AREA)

A-0063 Include if feature needed to connect included drainage features (2H).

L-4704 Type size per area size at map /chart scale:
06 point - WID < 14 mm and LEN < 55 mm
08 point - WID >= 14 mm and < 28 mm; LEN >= 55 mm and < 82 mm
10 point - WID >= 28 mm and < 44 mm; LEN >= 82 mm and < 118 mm
12 point - WID >= 44 mm and < 62 mm; LEN >= 118 mm and < 158 mm
14 point - WID >= 62 mm and < 84 mm; LEN >= 158 mm and < 198 mm
16 point - WID >= 84 mm and < 104 mm; LEN >= 198 mm and < 240 m
18 point - WID >= 104 mm and LEN >= 240 mm
Where WID and LEN measurements are inconsistent, the larger type size shall be used.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4821 Descriptive type or name shall be positioned in the following priority:
(1) Horizontal within area feature, if the type will fit entirely within the area. If type consists of more than one word, it may be split into several lines if necessary.
(2) Use Rule L-4722 if type will not fit in area.

L-4822 If width < 30 mm at chart scale, do not show name.

R-2745 A river/stream (2H140), lake/pond (2H080) or canal (2H020) is required for port access (RPA=001) if it provides access by water to a port or other navigationally significant location for which DMA has an area requirement to chart. A river/stream (2H140), lake/pond (2H080) or canal (2H020) is not required for port access (RPA=002) if it is not used to provide access by water to a port or other navigationally significant location for which DMA has an area requirement to chart.

A lock (2I030) is RPA=001 if it is associated with a water body that is required for port access (RPA=001).

A rapids (2H120), waterfall (2H180), or dam (2I020) is an inland water obstruction (IWO=001) if it falls within a body of water that is required for port access (RPA=001). Otherwise, these features are not obstructions (IWO=002).

R-3673 Do not show land tint in the symbol. If attribute HYC is present, do not show land tint if HYC=008 (Perennial).

LAND SUBJECT TO INUNDATION...2H090 (AREA)

R-2928 Area pattern is haloed for 0.2 mm around type that falls in the area, or any linear feature running through the area, except boundaries (FACS Sub-Category 6A).

RAPIDS...2H120 (LINE)

L-4823 Label shall be placed horizontally on land on the right or upper bank, opposite where the symbol line meets the bank. If it conflicts with other detail, it may be placed on the left or lower bank, or entirely within the stream. It shall not overprint banks.

FEATURE: RAPIDS...2H120 (LINE)

R-2429 Rapid symbols shall be shown on double-line River/Stream (2H140) perpendicular to the River/Stream centerline. The Rapids LEN is to be considered coincident with the River/Stream centerline.

R-2745 A river/stream (2H140), lake/pond (2H080) or canal (2H020) is required for port access (RPA=001) if it provides access by water to a port or other navigationally significant location for which DMA has an area requirement to chart. A river/stream (2H140), lake/pond (2H080) or canal (2H020) is not required for port access (RPA=002) if it is not used to provide access by water to a port or other navigationally significant location for which DMA has an area requirement to chart.

A lock (2I030) is RPA=001 if it is associated with a water body that is required for port access (RPA=001).

A rapids (2H120), waterfall (2H180), or dam (2I020) is an inland water obstruction (IWO=001) if it falls within a body of water that is required for port access (RPA=001). Otherwise, these features are not obstructions (IWO=002).

R-2929 Line shall show the first occurrence of the feature upstream of the navigable portion of the river. Do not show feature if it is >= 5 km from navigable portion of the river. Navigable portion of river is that portion which shows soundings (2E020) and depth curves (2E010).

RIVER /STREAM...2H140 (AREA)

D-1911 If a conspicuous (COC=001) point symbol coalesces (less than 0.2mm from) with a line symbol, or the boundary of an area symbol, the line or area boundary is displaced around the conspicuous point symbol. If a non-conspicuous (COC=002) point symbol coalesces (less than 0.2mm away from) with a line symbol or boundary of an area symbol, the non-conspicuous point symbol is displaced away from the line or area boundary symbol until it no longer coalesces.

L-4770 Labeling areas based on width:

Type Size:	If Width Is:
08 point	< 8 mm
10 point	>= 8 mm < 18 mm
12 point	>= 18 mm < 30 mm
14 point	>= 30 mm

Type is centered in area and repeated every 10 cm.

L-4824 Name shall be positioned in the center of that part of a feature appearing on a chart, i.e., centered from bank to bank, and centered from mouth to neatline. Type shall run parallel to center line, reading left to right, or bottom to top if feature is vertical. Type may be moved sideways to avoid overprints or sharp bends (>= 5°).

R-2299 Rivers (2H140) under the influence of the rise and fall of the tide (TID=002) shall have their banks delineated at the high water line. Inland of tidal influence (TID=001), average water level shall be shown for perennial rivers (HYC=008), and flood stage shall be shown for intermittent (HYC=006), or dry (HYC=003) rivers.

R-2429 Rapid symbols shall be shown on double-line River/Stream (2H140) perpendicular to the River/Stream centerline. The Rapids LEN is to be considered coincident with the River/Stream centerline.

FEATURE: RIVER /STREAM...2H140 (AREA)

R-2745 A river/stream (2H140), lake/pond (2H080) or canal (2H020) is required for port access (RPA=001) if it provides access by water to a port or other navigationally significant location for which DMA has an area requirement to chart. A river/stream (2H140), lake/pond (2H080) or canal (2H020) is not required for port access (RPA=002) if it is not used to provide access by water to a port or other navigationally significant location for which DMA has an area requirement to chart.

A lock (2I030) is RPA=001 if it is associated with a water body that is required for port access (RPA=001).

A rapids (2H120), waterfall (2H180), or dam (2I020) is an inland water obstruction (IWO=001) if it falls within a body of water that is required for port access (RPA=001). Otherwise, these features are not obstructions (IWO=002).

R-2747 Where area features transition to line features, for example, where an area river changes to a line river, the minimum width area symbol shall be tapered to a point so that it transitions smoothly into a line symbol.

R-3673 Do not show land tint in the symbol. If attribute HYC is present, do not show land tint if HYC=008 (Perennial).

S-1500 Symbolize the casement portions (Left Bank / Right Bank) of the feature using the ACC and SLT attributes of the individual river or canal banks in conjunction with the inland shoreline (2H075) symbology. The AHC attribution of the inland shoreline (2H075) shall correspond to the HYC attribution of the associated water body as follows: HYC 008 = AHC 001, HYC 006 = AHC 002, and HYC 003 = AHC 003.

T-0840 Streams shall only be shown to the limits of relief (3A010).

RIVER /STREAM...2H140 (LINE)

D-1911 If a conspicuous (COC=001) point symbol coalesces (less than 0.2mm from) with a line symbol, or the boundary of an area symbol, the line or area boundary is displaced around the conspicuous point symbol. If a non-conspicuous (COC=002) point symbol coalesces (less than 0.2mm away from) with a line symbol or boundary of an area symbol, the non-conspicuous point symbol is displaced away from the line or area boundary symbol until it no longer coalesces.

L-4743 If feature type is linear, the label hierarchy is:
(1) Label shall be placed 1 mm above feature, centered.
(2) Top of label shall be placed 1 mm below feature, centered.
(3) Label may be displaced along the feature; use two labels if feature length 150 mm or greater.
(4) Do not label across shoreline (2A010 or 2H075).

R-2745 A river/stream (2H140), lake/pond (2H080) or canal (2H020) is required for port access (RPA=001) if it provides access by water to a port or other navigationally significant location for which DMA has an area requirement to chart. A river/stream (2H140), lake/pond (2H080) or canal (2H020) is not required for port access (RPA=002) if it is not used to provide access by water to a port or other navigationally significant location for which DMA has an area requirement to chart.

A lock (2I030) is RPA=001 if it is associated with a water body that is required for port access (RPA=001).

A rapids (2H120), waterfall (2H180), or dam (2I020) is an inland water obstruction (IWO=001) if it falls within a body of water that is required for port access (RPA=001). Otherwise, these features are not obstructions (IWO=002).

R-2930 Intermittent river/streams (2H140) shall join other river/treams and end at dashes, not dots.

FEATURE: RIVER /STREAM...2H140 (LINE)

T-0838 Line feature River Streams (2H140) shall not be shown unless they are:
a. Continuations of area feature River/Streams, or
b. Flow directly into the sea or into inland waterway features (2H020 Canal, 2H080 Lake/Pond, or 2H140 River/Stream) that are required for port access (RPA=001). These minor streams shall only be shown inland to the point where they become obscured by intervening relief/terrrain.

T-0839 If more than three intermittent streams (2H140, HYC=006) fall within 50 mm of each other, show only the longest one.

T-0840 Streams shall only be shown to the limits of relief (3A010).

SALT EVAPORATOR...2H150 (AREA)

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

R-2913 Features with areas greater than 100 square cm shall be represented by a legend, e.g., Kelp, Eddies, Overfalls, rather than by the graphic symbol. Type is 6 point Swiss 742. Black SPC-58600, and label is scattered over area at approximately 50 mm intervals. Position is horizontal and shall not overprint other features.

R-2931 Line pattern shall be parallel to neatlines.

WATERFALL...2H180 (LINE)

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4813 Descriptive terms, e.g., "Canal" shall be shown if the name is not known. If the descriptive word appears in the name, for example, "PANAMA CANAL", the descriptive type shall not be shown, i.e., do not show "Panama Canal Canal".

L-4823 Label shall be placed horizontally on land on the right or upper bank, opposite where the symbol line meets the bank. If it conflicts with other detail, it may be placed on the left or lower bank, or entirely within the stream. It shall not overprint banks.

R-2745 A river/stream (2H140), lake/pond (2H080) or canal (2H020) is required for port access (RPA=001) if it provides access by water to a port or other navigationally significant location for which DMA has an area requirement to chart. A river/stream (2H140), lake/pond (2H080) or canal (2H020) is not required for port access (RPA=002) if it is not used to provide access by water to a port or other navigationally significant location for which DMA has an area requirement to chart.

A lock (2I030) is RPA=001 if it is associated with a water body that is required for port access (RPA=001).

A rapids (2H120), waterfall (2H180), or dam (2I020) is an inland water obstruction (IWO=001) if it falls within a body of water that is required for port access (RPA=001). Otherwise, these features are not obstructions (IWO=002).

R-2929 Line shall show the first occurrence of the feature upstream of the navigable portion of the river. Do not show feature if it is >= 5 km from navigable portion of the river. Navigable portion of river is that portion which shows soundings (2E020) and depth curves (2E010).

DAM...2I020 (AREA)

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4823 Label shall be placed horizontally on land on the right or upper bank, opposite where the symbol line meets the bank. If it conflicts with other detail, it may be placed on the left or lower bank, or entirely within the stream. It shall not overprint banks.

FEATURE: DAM...2I020 (AREA)

R-2745 A river/stream (2H140), lake/pond (2H080) or canal (2H020) is required for port access (RPA=001) if it provides access by water to a port or other navigationally significant location for which DMA has an area requirement to chart. A river/stream (2H140), lake/pond (2H080) or canal (2H020) is not required for port access (RPA=002) if it is not used to provide access by water to a port or other navigationally significant location for which DMA has an area requirement to chart.

A lock (2I030) is RPA=001 if it is associated with a water body that is required for port access (RPA=001).

A rapids (2H120), waterfall (2H180), or dam (2I020) is an inland water obstruction (IWO=001) if it falls within a body of water that is required for port access (RPA=001). Otherwise, these features are not obstructions (IWO=002).

R-2932 Dams (2I020) shall only be shown if the associated water symbol, e.g., river/stream (2H140), reservoir (2H130) are shown also. If a dam is conspicuous (COC=001), add associated water features to the chart, and all downstream features until the river/stream connects with an already included water feature.

R-9035 Show land tint inside the symbol.

V-1013 If MCP = 000, omit MCP window.

DAM...2I020 (LINE)

L-4823 Label shall be placed horizontally on land on the right or upper bank, opposite where the symbol line meets the bank. If it conflicts with other detail, it may be placed on the left or lower bank, or entirely within the stream. It shall not overprint banks.

L-4883 If the attribute value that labels a symbol is "unknown" or "other", label the symbol with the FACS Feature name.

R-2745 A river/stream (2H140), lake/pond (2H080) or canal (2H020) is required for port access (RPA=001) if it provides access by water to a port or other navigationally significant location for which DMA has an area requirement to chart. A river/stream (2H140), lake/pond (2H080) or canal (2H020) is not required for port access (RPA=002) if it is not used to provide access by water to a port or other navigationally significant location for which DMA has an area requirement to chart.

A lock (2I030) is RPA=001 if it is associated with a water body that is required for port access (RPA=001).

A rapids (2H120), waterfall (2H180), or dam (2I020) is an inland water obstruction (IWO=001) if it falls within a body of water that is required for port access (RPA=001). Otherwise, these features are not obstructions (IWO=002).

R-2932 Dams (2I020) shall only be shown if the associated water symbol, e.g., river/stream (2H140), reservoir (2H130) are shown also. If a dam is conspicuous (COC=001), add associated water features to the chart, and all downstream features until the river/stream connects with an already included water feature.

LOCK...2I030 (AREA)

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4823 Label shall be placed horizontally on land on the right or upper bank, opposite where the symbol line meets the bank. If it conflicts with other detail, it may be placed on the left or lower bank, or entirely within the stream. It shall not overprint banks.

L-4825 Place type inside feature aligned with major axis if possible. If feature is too small, use Rule L-4823.

FEATURE: LOCK...2I030 (AREA)

R-2745 A river/stream (2H140), lake/pond (2H080) or canal (2H020) is required for port access (RPA=001) if it provides access by water to a port or other navigationally significant location for which DMA has an area requirement to chart. A river/stream (2H140), lake/pond (2H080) or canal (2H020) is not required for port access (RPA=002) if it is not used to provide access by water to a port or other navigationally significant location for which DMA has an area requirement to chart.

A lock (2I030) is RPA=001 if it is associated with a water body that is required for port access (RPA=001).

A rapids (2H120), waterfall (2H180), or dam (2I020) is an inland water obstruction (IWO=001) if it falls within a body of water that is required for port access (RPA=001). Otherwise, these features are not obstructions (IWO=002).

R-2935 Where locks (2I030) overprint shoreline (2A010, 2H075)), canal (2H020), or river/stream (2H140), these features shall be deleted where overprint occurs. Locks shall not be shown if the associated water feature is not included on the product.

R-3726 The interior of the HAC symbol for an area lock (2I030A001) shall have the interior of the symbol drawn at the real world position of the limits of the lock, so that the interior white area shows true to scale the size of the interior of the lock.

R-9037 Do not show land tint inside symbol.

LOCK...2I030 (POINT)

L-4823 Label shall be placed horizontally on land on the right or upper bank, opposite where the symbol line meets the bank. If it conflicts with other detail, it may be placed on the left or lower bank, or entirely within the stream. It shall not overprint banks.

R-2371 The point of the Lock or Sluice Gate symbol shall be positioned pointing upstream.

R-2745 A river/stream (2H140), lake/pond (2H080) or canal (2H020) is required for port access (RPA=001) if it provides access by water to a port or other navigationally significant location for which DMA has an area requirement to chart. A river/stream (2H140), lake/pond (2H080) or canal (2H020) is not required for port access (RPA=002) if it is not used to provide access by water to a port or other navigationally significant location for which DMA has an area requirement to chart.

A lock (2I030) is RPA=001 if it is associated with a water body that is required for port access (RPA=001).

A rapids (2H120), waterfall (2H180), or dam (2I020) is an inland water obstruction (IWO=001) if it falls within a body of water that is required for port access (RPA=001). Otherwise, these features are not obstructions (IWO=002).

R-2935 Where locks (2I030) overprint shoreline (2A010, 2H075)), canal (2H020), or river/stream (2H140), these features shall be deleted where overprint occurs. Locks shall not be shown if the associated water feature is not included on the product.

GLACIER...2J030 (AREA)

R-9037 Do not show land tint inside symbol.

ICE PEAK, NUNATAK...2J060 (POINT)

T-0841 If more than four features fall within an area less than 20 mm x 20 mm, retain the highest conspicuous feature and label it "Numerous _____", inserting feature name, i.e., "Numerous nunataks". If the area is larger than 20 mm x 20 mm, but has the same density as above, label shall be shown once for the whole area, rather than once for each 20 mm x 20 mm area.

FEATURE: ICE SHELF...2J065 (AREA)

ICE SHELF...2J065 (AREA)

R-2256 The open water tint shall not be shown within an ice shelf (2J065).

R-2804 When an area symbol or cased line symbol overprints the shoreline, shoreline is deleted.

R-9037 Do not show land tint inside symbol.

SNOW FIELD /ICE FIELD...2J100 (AREA)

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

R-9037 Do not show land tint inside symbol.

CONTOUR (LAND)...3A010 (LINE)

L-4786 Placement of ZVL label:
(1) Break contour the width of the label plus 1 mm on each side. Center label in this space, readable left to right or if vertical, bottom to top.
(2) Each contour 20 mm or longer shall have at least one label, space labels 120 mm apart.
(3) Labels may be moved any distance to avoid overprinting other data.
(4) Contours less than 20 mm do not require a label.

R-2279 Contour interval shall be uniform for any chart, or series of overlapping charts at the same scale, except that the lowest contour may be a supplementary contour. Contour interval should be chosen so that not more than ten contours are needed for the full range of elevations on a single chart, or particular series of charts at the same scale.

R-2280 Hypsography (contours 3A010, and spot elevations 3A030) shall only be shown to the highest profile visible from seaward, either from open water (2A040) or inland waterways required for port access (RPA=001) on canal (2H020), lake/pond (2H080), or river/stream (2H140). Hypsography inland of this limit of relief may be eliminated.

R-2893 Contours (3A010) shall be broken for other feature symbols, including descriptive type.

R-2894 Form lines, (3A010, HQC=004) shall be used only when other contours (HQC=001, 002, 003, 007 and 012) are not depicted. Use to emphasize spot elevations (3A030), or as they are shown on ancillary sources.

T-0829 If features coalesce or are < 0.3 mm apart, thin or omit contours (3A010) by using the following hierarchy:
(a) HQC=001 - Do not thin. Change interval if necessary to prevent coalescing; i.e., if contour interval is 10, change to 20.
(b) HQC=002 - Drop those that will leave the maximum.
(c) HQC=011
(d) HQC=012
(e) HQC=003
(f) HQC=004

SPOT ELEVATION...3A030 (POINT)

L-4719 If the ZVL type associated with a spot elevation (3A030) on the island will fit inside the island without overprinting the shoreline (2A010 or 2H075), place the elevation (ZVL) type on land.

L-4720 If the ZVL type associated with the spot elevation (3A030) on the island will not fit inside the island without overprinting the shoreline (2A010 or 2H075), place the elevation (ZVL) type in the water adjacent to the island and in parentheses. Do not overprint the shoreline.

FEATURE: SPOT ELEVATION...3A030 (POINT)

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4737 Feature name /label shall be positioned parallel to lines of latitude and readable left to right.

L-4889 A spot elevation (3A030) shall be positioned at the highest elevation along a bluff/cliff, escarpment (4B010). The label shall read horizontal, and be positioned 1 mm away from the cliff symbol, on the landward side.

R-2206 Spot elevations (3A030) shall be shown at the highest point of islands (4B135). If the width of the island is less than 5 mm, the dot or point symbol shall be deleted and the number shown by itself. If the number will not fit on land, it shall be placed in the water enclosed by parentheses, for example "(5)"

R-2281 Spot elevations (3A030) shall be shown on the summits of hills and mountains.

R-2896 The location of the contour feature (3A030) must be visible from seaward.

T-0843 If the designated location is not visible from seaward, omit spot elevations (3A030).

GROUND SURFACE...4A010 (AREA)

R-9035 Show land tint inside the symbol.

BLUFF /CLIFF, ESCARPMENT...4B010 (LINE)

R-2291 If a cliff (4B010) is shown in conjunction with a rocky shoreline (2A010, SLT=010), the cliff portion of the rocky shoreline symbol shall be deleted where it overprints the cliff symbol, and the cliff symbol shall be displaced inland so it does not overprint the line portion of the shoreline symbol.

EMBANKMENT...4B090 (AREA)

R-2802 Where symbols with the same feature code but different values of VRC are adjacent to each other, the boundary of the feature that is the highest in the vertical plane shall be shown, and the boundary of the feature that is lower shall be deleted. For example, the feature above water is shown whole, while the feature that covers and uncovers has that portion of its symbol perimeter that overprints the higher feature deleted

R-3672 Show land tint inside the symbol. If attribute VRC is present, show land tint only if VRC=001 (Above surface/does not cover at High Water).

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

EMBANKMENT...4B090 (LINE)

L-4743 If feature type is linear, the label hierarchy is:
(1) Label shall be placed 1 mm above feature, centered.
(2) Top of label shall be placed 1 mm below feature, centered.
(3) Label may be displaced along the feature; use two labels if feature length 150 mm or greater.
(4) Do not label across shoreline (2A010 or 2H075).

R-2802 Where symbols with the same feature code but different values of VRC are adjacent to each other, the boundary of the feature that is the highest in the vertical plane shall be shown, and the boundary of the feature that is lower shall be deleted. For example, the feature above water is shown whole, while the feature that covers and uncovers has that portion of its symbol perimeter that overprints the higher feature deleted

FEATURE: EMBANKMENT...4B090 (LINE)

R-3672 Show land tint inside the symbol. If attribute VRC is present, show land tint only if VRC=001 (Above surface/does not cover at High Water).

R-3708 A blue 31% tint shall not overprint other blue 31% tints. If two blue tinted symbols, or one tinted symbol and water tint overprint, only one 31% tint shall be shown in the area.

ISLAND...4B135 (AREA)

L-4704 Type size per area size at map /chart scale:
06 point - WID < 14 mm and LEN < 55 mm
08 point - WID >= 14 mm and < 28 mm; LEN >= 55 mm and < 82 mm
10 point - WID >= 28 mm and < 44 mm; LEN >= 82 mm and < 118 mm
12 point - WID >= 44 mm and < 62 mm; LEN >= 118 mm and < 158 mm
14 point - WID >= 62 mm and < 84 mm; LEN >= 158 mm and < 198 mm
16 point - WID >= 84 mm and < 104 mm; LEN >= 198 mm and < 240 m
18 point - WID >= 104 mm and LEN >= 240 mm
Where WID and LEN measurements are inconsistent, the larger type size shall be used.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

R-2423 When coastal shorelines (2A010) associated with islands (4B135) coalesce at map scale, that portion of the shoreline which coalesces should be symbolized without vignette portion of the symbol, i.e., default shoreline symbol to shoreline with ACC=001 (Accurate) and SLT=015 (Other).

R-2736 Islands (4B135) within river/stream (2H140) and lake/ponds (2H080) that are not required for port access (RPA=002), may be deleted, if length is less than 10 mm at chart scale.

ISLAND...4B135 (POINT)

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

R-2736 Islands (4B135) within river/stream (2H140) and lake/ponds (2H080) that are not required for port access (RPA=002), may be deleted, if length is less than 10 mm at chart scale.

SAND DUNES /SAND HILLS...4B170 (AREA)

L-4705 Labeling areas, in order of preference:
(1) Centered in area on one line in the area, type is horizontal, reading left to right.
(2) Centered in area on one line in the area, oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(3) Centered in area on two approximately equal lines, without splitting a word, type is horizontal, reading left to right.
(4) Centered on two approximately equal lines without splitting a word, type is oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(5) Use Rule L-4722 for type placement if the area is too small to place the type inside the area.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

VOLCANO...4B180 (AREA)

FEATURE: VOLCANO...4B180 (AREA)

L-4700 Use the following abbreviations for ACC and EXS values:
If ACC=002, label "PA"
If ACC=003, label "PD"
If EXS=002, label "ED"
If EXS=003, label "Rep"

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4708 Date (DAT) shall only be shown if EXS=003 (Reported). Date shall be shown in parentheses. If date is unknown, delete label and parentheses from the symbol. Always show "Rep" and date on the same line.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

O-3411 Unless specifically indicated on source material as inaccurate or doubtful, etc., or modified by other override rules, feature shall be assumed to be accurate (ACC=001), and definite (EXS=001). This rule applies to accuracy and existence of unique features, and is not related to the accuracy of the source as a whole.

Following IHO practice, features whose positions are approximate (ACC=002) are labeled "PA" on source charts. Features whose positions are doubtful (ACC=003) are labeled "PD" on source charts. Features whose existence is doubtful (EXS=002) are labeled "ED" on source charts. Features that have only been reported (EXS=003) are labeled "Rep" on source charts, and usually show the date of report (DAT) in parentheses.

Definitions
PA - Position Approximate = The position has not been accurately determined, or does not remain fixed.
PD - Position Doubtful = The feature has been reported in various positions, but not definitely determined to be in any.
ED - Existence Doubtful = Indicates the posible existence of the feature, the actual existence of which has not been established.

TREES...5C030 (AREA)

O-3429 Area vegetation features (Category 5) are considered conspicuous (COC=001) where near the coast, wooded or vegetated areas alternate with clear or open areas, and so may assist the navigator in identifying headlands and other stretches of coastline. Vegetation that makes up the general ground cover is useless for identification purposes.

O-3432 Woods in general (5C030, EXS=042), other than mangrove (VEG=019), shall be represented as mixed trees (TRE=003, VEG=021) if the width at chart scale is greater than 10 mm. If 10 mm or less in width, at chart scale, individual tree types, with various TRE and VEG attribute values, shall be shown.

R-2826 Features with the same code, separated by less than 2 mm at chart scale, shall be combined into one areal feature.

R-2976 Single trees shall be shown with the point symbol with position circle. Groups of trees shall be shown by the tree symbol without the position circle. Tree symbol shall be spaced over area at approximately 5 mm interval. At least one complete tree symbol shall be shown for small areas.

TREES...5C030 (POINT)

FEATURE: TREES...5C030 (POINT)

D-7011 A feature with attribute value of COC=002 (Not Conspicuous) shall not displace a feature with attribute value of COC=001 (Conspicuous).

SWAMP...5D030 (AREA)

R-2202 The feature foreshore (2A020) and other area or point symbols with the attribute value VRC=008 (Covers and uncovers) that only have a 12% black screen shall be overprinted with a blue screen (SPC-48253, 31% screen, 45° angle), if not already tinted according to rules for blue water tints on depth curve (2E010) and open water (2A040). The same shall be done to symbols that are tidal (TID=002).

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary *overprinting the shoreline or on land* is deleted.

R-2826 Features with the same code, separated by less than 2 mm at chart scale, shall be combined into one areal feature.

MARSH...5D040 (AREA)

R-2202 The feature foreshore (2A020) and other area or point symbols with the attribute value VRC=008 (Covers and uncovers) that only have a 12% black screen *shall be overprinted with a blue screen (SPC-48253, 31% screen, 45°* angle), if not already tinted according to rules for blue water tints on depth curve (2E010) and open water (2A040). The same shall be done to symbols that are tidal (TID=002).

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

R-2826 Features with the same code, separated by less than 2 mm at chart scale, shall be combined into one areal feature.

ADMINISTRATIVE BOUNDARY...6A000 (LINE)

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4713 Boundary label names shall be positioned 1 mm away from and parallel to the boundary line. Type shall read left to right, or bottom to top if the axis is vertical. When two names are required they shall be centered with respect to one another. Names shall be centered on the inland portion of the boundary, but may be moved parallel to the boundary <= 4 mm to avoid overprints.

L-4746 Possession of islands and island groups shall be shown by placing the country name in parentheses below the island name or island group name. If all of the islands in an Island group belong to one country, the country name shall be placed under the island group name only. If islands within the same island group belong to different countries, the country name shall be placed under each island name, and not under the island group name. Islands administered jointly by two countries shall show both country names, separated by a dash, e.g., (UK-US). Country names shall be abbreviated in the manner approved by the Board of Geographic Names. Type size for country names shall be 2/3 the size of the island name or island group name, but shall not be less than 5 point.

L-4879 If BST=001 (Definite), delete the BST label.

R-2497 In areas where there is no defined boundary between two countries (BST=004), center NM3 and NM4 in the approximate area on their respective sides of the label 'NO DEFINED BOUNDARY' Pairs of labels may be repeated if necessary for large areas, but pairs should be positioned far enough apart so that they DO NOT imply a specific division line between the two countries.

R-2801 If feature is in a double line stream, it shall be shown in its entirety. If feature is coincident with stream's shoreline, every third set shall be shown. *A set is one long dash with two short dashes.*

R-2836 Charts that cover Canadian or Mexican waters and include U.S. waters show the same international boundaries (6A000, USE=023) shown on National Ocean Service (NOS) charts. Boundaries are not shown in open waters area.

FEATURE: ADMINISTRATIVE BOUNDARY...6A000 (LINE)

R-2838 Land boundary lines shall extend inland for 80 mm. Boundaries that do not extend to the shoreline shall not be shown.

R-2844 When specified by the Board of Geographic Names, the following note shall be placed in the margin or land area if a FACS Sub-Category 6A feature falls within the chart.

Boundary representation is not necessarily authoritative.

Additional information or instructions modifying this note may be contained in the names/boundaries/disclaimers notes source package. See notes and cautions section of product specifications.

ARMISTICE LINE...6A020 (LINE)

L-4713 Boundary label names shall be positioned 1 mm away from and parallel to the boundary line. Type shall read left to right, or bottom to top if the axis is vertical. When two names are required they shall be centered with respect to one another. Names shall be centered on the inland portion of the boundary, but may be moved parallel to the boundary <= 4 mm to avoid overprints.

R-2801 If feature is in a double line stream, it shall be shown in its entirety. If feature is coincident with stream's shoreline, every third set shall be shown. A set is one long dash with two short dashes.

R-2838 Land boundary lines shall extend inland for 80 mm. Boundaries that do not extend to the shoreline shall not be shown.

R-2844 When specified by the Board of Geographic Names, the following note shall be placed in the margin or land area if a FACS Sub-Category 6A feature falls within the chart.

Boundary representation is not necessarily authoritative.

Additional information or instructions modifying this note may be contained in the names/boundaries/disclaimers notes source package. See notes and cautions section of product specifications.

CEASE-FIRE LINE...6A030 (LINE)

L-4714 Boundary labels shall be positioned 1 mm away from and parallel to the boundary line. Type shall read left to right, or bottom to top if the axis is vertical. Labels shall be placed INSIDE the area the boundary delimits.

R-2801 If feature is in a double line stream, it shall be shown in its entirety. If feature is coincident with stream's shoreline, every third set shall be shown. A set is one long dash with two short dashes.

R-2838 Land boundary lines shall extend inland for 80 mm. Boundaries that do not extend to the shoreline shall not be shown.

R-2844 When specified by the Board of Geographic Names, the following note shall be placed in the margin or land area if a FACS Sub-Category 6A feature falls within the chart.

Boundary representation is not necessarily authoritative.

Additional information or instructions modifying this note may be contained in the names/boundaries/disclaimers notes source package. See notes and cautions section of product specifications.

FEATURE: CLAIM LINE...6A040 (LINE)

CLAIM LINE...6A040 (LINE)

L-4714 Boundary labels shall be positioned 1 mm away from and parallel to the boundary line. Type shall read left to right, or bottom to top if the axis is vertical. Labels shall be placed INSIDE the area the boundary delimits.

R-2801 If feature is in a double line stream, it shall be shown in its entirety. If feature is coincident with stream's shoreline, every third set shall be shown. A set is one long dash with two short dashes.

R-2838 Land boundary lines shall extend inland for 80 mm. Boundaries that do not extend to the shoreline shall not be shown.

R-2844 When specified by the Board of Geographic Names, the following note shall be placed in the margin or land area if a FACS Sub-Category 6A feature falls within the chart.

Boundary representation is not necessarily authoritative.

Additional information or instructions modifying this note may be contained in the names/boundaries/disclaimers notes source package. See notes and cautions section of product specifications.

INTERNATIONAL MARITIME BOUNDARY...6A050 (LINE)

L-3803 Position type 3 mm away from line on each side, reading left to right, or bottom to top if line is vertical. Position country names adjacent to each other, and TXT label to the right of NM3 label.

R-2756 When the US-Russia International Maritime Boundary is shown on the map/chart, a legend "See note" shall be shown next to the boundary, and the following note shown in the margin of the map/chart, or if necessary, in any open water area:

NOTE
Maritime boundary provisionally applied
pending formal exchange of insturments
of ratification.

DEFACTO BOUND. /OTHER LINE OF SEPARATION...6A060 (LINE)

L-4707 If the attribute value is ACC 001 (Accurate) or EXS 001 (Definite), delete the window and condense remaining windows.

L-4713 Boundary label names shall be positioned 1 mm away from and parallel to the boundary line. Type shall read left to right, or bottom to top if the axis is vertical. When two names are required they shall be centered with respect to one another. Names shall be centered on the inland portion of the boundary, but may be moved parallel to the boundary <= 4 mm to avoid overprints.

R-2276 If a boundary is not recognized by the U.S. Deptartment of State as an official international boundary, but falls under the category of "Other Line of Separation", and the type of boundary is not portrayed by another Subcategory 6A FACS feature, the TXT attribute is used to label the line in accordance with Geonames/Boundary guidance; e.g. "Administrative Line", "Provisional Administrative Line."

R-2801 If feature is in a double line stream, it shall be shown in its entirety. If feature is coincident with stream's shoreline, every third set shall be shown. A set is one long dash with two short dashes.

R-2838 Land boundary lines shall extend inland for 80 mm. Boundaries that do not extend to the shoreline shall not be shown.

FEATURE: DEFACTO BOUND. /OTHER LINE OF SEPARATION...6A060 (LINE)

R-2844 When specified by the Board of Geographic Names, the following note shall be placed in the margin or land area if a FACS Sub-Category 6A feature falls within the chart.

Boundary representation is not necessarily authoritative.

Additional information or instructions modifying this note may be contained in the names/boundaries/disclaimers notes source package. See notes and cautions section of product specifications.

DEMILITARIZED ZONE...6A070 (AREA)

L-4714 Boundary labels shall be positioned 1 mm away from and parallel to the boundary line. Type shall read left to right, or bottom to top if the axis is vertical. Labels shall be placed INSIDE the area the boundary delimits.

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

R-2801 If feature is in a double line stream, it shall be shown in its entirety. If feature is coincident with stream's shoreline, every third set shall be shown. A set is one long dash with two short dashes.

R-2838 Land boundary lines shall extend inland for 80 mm. Boundaries that do not extend to the shoreline shall not be shown.

R-2884 The point of the light flare (Posicut No. 94) shall be 1 mm from the dot or small circle representing the position of the feature.

ZONE OF OCCUPATION...6A170 (AREA)

L-4714 Boundary labels shall be positioned 1 mm away from and parallel to the boundary line. Type shall read left to right, or bottom to top if the axis is vertical. Labels shall be placed INSIDE the area the boundary delimits.

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

R-2801 If feature is in a double line stream, it shall be shown in its entirety. If feature is coincident with stream's shoreline, every third set shall be shown. A set is one long dash with two short dashes.

R-2838 Land boundary lines shall extend inland for 80 mm. Boundaries that do not extend to the shoreline shall not be shown.

R-2844 When specified by the Board of Geographic Names, the following note shall be placed in the margin or land area if a FACS Sub-Category 6A feature falls within the chart.

Boundary representation is not necessarily authoritative.

Additional information or instructions modifying this note may be contained in the names/boundaries/disclaimers notes source package. See notes and cautions section of product specifications.

DIRECTION OF BUOYAGE INDICATOR...6C035 (POINT)

L-3804 The note "GENERAL DIRECTION OF BUOYAGE ON THIS CHART" is generally shown, reading horizontally, near the stem of the arrow, but it may be omitted in congested areas.

R-2757 The standard size "Direction of Buoyage" symbol may be reduced in size to 75% or 50% for use in congested areas.

DREDGED CHANNEL /DREDGED AREA...6C040 (AREA)

FEATURE: DREDGED CHANNEL /DREDGED AREA...6C040 (AREA)

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4747 Type placement order of preference:
(1) Centered in area, parallel to longer of two axes, reading left to right, or bottom to top if longer axis of the feature is vertical.
(2) Shifted sideways to avoid overprints.
(3) Placed outside area parallel and 1 mm away from top boundary, reading left to right, or parallel to and 1 mm away from left boundary, reading bottom to top, if the major axis is vertical, centered with respect to the major axis.
(4) Shifted sideways to avoid overprints.
(5) Shifted up to avoid overprints, to a maximum distance of 6 mm.

L-4748 If space does not allow for the full legend to be shown, labels for Dredged Channels (6C040) are condensed in the following order:
1. Delete "Dredged to" or "Maintained depth" labels first,
2. Delete DAT label and parentheses second,
3. Delete DAN label third.

Do not delete HDP label or the "m" fron any 6C040 feature.

R-2205 If adjacent areas of this feature have different depths (HDP), the common boundary shall be shown with the lineweight reduced to half (0.2 mm changed to 0.1 mm), dash lengths of 2.0 mm and dash spaces of 0.5 mm. Color remains the same.

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2278 Dredged channels/areas (6C040) shall be tinted in accordance with their depths (HDP), following the guidance for generation of water tint provided in PG rules for depth curves (2E010) and/or open water (2A040).

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

R-2840 If ATN =001 (Marked), DAN shall be shown if one of the following conditions occur:
(1) The aids to navigation (2C features) that mark the feature do not meet the inclusion conditions for aids to navigation.
(2) The aids to navigation (2C features) that mark a feature are known to exist, but the details, such as position, type of aid, etc, are not sufficient to chart them as aids to navigation.
If 2C features are shown, or information about aids to navigation is completely lacking, omit the DAN label.

R-2986 Symbol perimeter shall be broken where ship traffic enters and exits the feature. Feature boundary is symbolized only on those edges where ship traffic does not enter or exit the feature.

V-1067 If DAT is unknown, omit DAT window.

DREDGED CHANNEL /DREDGED AREA...6C040 (LINE)

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4743 If feature type is linear, the label hierarchy is:
(1) Label shall be placed 1 mm above feature, centered.
(2) Top of label shall be placed 1 mm below feature, centered.
(3) Label may be displaced along the feature; use two labels if feature length 150 mm or greater.
(4) Do not label across shoreline (2A010 or 2H075).

FEATURE: DREDGED CHANNEL /DREDGED AREA...6C040 (LINE)

L-4748 If space does not allow for the full legend to be shown, labels for Dredged Channels (6C040) are condensed in the following order:
1. Delete "Dredged to" or "Maintained depth" labels first,
2. Delete DAT label and parentheses second,
3. Delete DAN label third.

Do not delete HDP label or the "m" fron any 6C040 feature.

R-2209 If two line features of the same FACS code meet end to end, and have different depths (HDP), a short line is shown centered on the point of intersection. It bisects the angle at which the line features meet (i.e., if the lines meet at 180° angle the bisecting line is perpendicular to the meeting line features). The bisecting line is 0.1 mm lineweight, length is 3.0 mm, and it is shown in the same color as the line features.

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2278 Dredged channels/areas (6C040) shall be tinted in accordance with their depths (HDP), following the guidance for generation of water tint provided in PG rules for depth curves (2E010) and/or open water (2A040).

R-2840 If ATN =001 (Marked), DAN shall be shown if one of the following conditions occur:
(1) The aids to navigation (2C features) that mark the feature do not meet the inclusion conditions for aids to navigation.
(2) The aids to navigation (2C features) that mark a feature are known to exist, but the details, such as position, type of aid, etc, are not sufficient to chart them as aids to navigation.
If 2C features are shown, or information about aids to navigation is completely lacking, omit the DAN label.

V-1067 If DAT is unknown, omit DAT window.

INSHORE TRAFFIC ZONE...6C075 (AREA)

L-4749 Labels for Inshore Traffic Zone:

Type Size	Area Width
8 point	0-20 mm
10 point	> 20 mm <= 40 mm
12 point	> 40 mm <= 60 mm
14 point	> 60 mm

Area width is measured from blue tint area to edge of Traffic Separation Scheme (6C180).

Type shall be centered in the area between the edge of the blue tint and the adjoining Traffic Separation Scheme. Type shall be spaced if the length of the Inshore Traffic Zone is greater than five times the length of the type string at normal spacing. If the length of type exceeds the length of zone, use the largest type size that will fit in the zone on one line, oriented along longer axis. If 8 point type exceeds length of zone at normal spacing, break the legend into two lines by centering "Zone" below "Inshore Traffic".

O-3426 If the width of a traffic separation zone is > 3 mm at chart scale, TSP shall be 003 (Separation Zone-Area). If the width of a separation zone is <= 3 mm at chart scale, TSP shall be 004 (Separation Zone-Line).

R-2852 The boundary between an inshore traffic zone (6C075) and a traffic separation scheme (6C180) shall be a tinted purple zone (AP-130) with a minimum width of 3 mm at chart scale. Outer edge of zone shall correspond with inshore traffic lane outer boundary. End boundary lines for Inshore Traffic Zone shall be T shape dashes, and shall be shown only when known. Boundaries between inshore traffic zones and land areas shall not be shown.

INSHORE TRAFFIC ZONE...6C075 (LINE)

FEATURE: INSHORE TRAFFIC ZONE...6C075 (LINE)

L-4749 Labels for Inshore Traffic Zone:

Type Size	Area Width
8 point	0-20 mm
10 point	> 20 mm <= 40 mm
12 point	> 40 mm <= 60 mm
14 point	> 60 mm

Area width is measured from blue tint area to edge of Traffic Separation Scheme (6C180).

Type shall be centered in the area between the edge of the blue tint and the adjoining Traffic Separation Scheme. Type shall be spaced if the length of the Inshore Traffic Zone is greater than five times the length of the type string at normal spacing. If the length of type exceeds the length of zone, use the largest type size that will fit in the zone on one line, oriented along longer axis. If 8 point type exceeds length of zone at normal spacing, break the legend into two lines by centering "Zone" below "Inshore Traffic".

O-3426 If the width of a traffic separation zone is > 3 mm at chart scale, TSP shall be 003 (Separation Zone-Area). If the width of a separation zone is <= 3 mm at chart scale, TSP shall be 004 (Separation Zone-Line).

R-2852 The boundary between an inshore traffic zone (6C075) and a traffic separation scheme (6C180) shall be a tinted purple zone (AP-130) with a minimum width of 3 mm at chart scale. Outer edge of zone shall correspond with inshore traffic lane outer boundary. End boundary lines for Inshore Traffic Zone shall be T shape dashes, and shall be shown only when known. Boundaries between inshore traffic zones and land areas shall not be shown.

MARITIME LIMIT...6C090 (AREA)

L-4008 If NAM = unknown, omit NAM window.

L-4715 Type sizes for Maritime Limits and areas:

8 point - < 8 sq. cm.
10 point - >= 8 and < 12 sq. cm.
12 point - >= 12 and < 24 sq. cm.
14 point - >= 24 and < 100 sq. cm.
8 point - >= 100 sq. cm.

Type placement for areas >= 100 sq. cm. to < 500 sq. cm.
Two labels are shown on approximately opposite sides of the area, preferably top and bottom.

Type placement for areas >= 500 sq. cm.
Labels are placed at approximately 250 mm. interval around the perimeter of the feature.

Do not place labels around sharp corners (interior angle <135°), or along chart neatlines. Place type 1 mm away and parallel to area limit line, reading left to right, or bottom to top if limit line is vertical. Type is placed on the INSIDE of the area.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4750 Label for OPS=002 (Abandoned) shall be "Disused", in Upper/lower case italic type, and enclosed in parentheses. It shall be centered under label for that area.

FEATURE: MARITIME LIMIT...6C090 (AREA)

L-4751 Maritime Limit type *'Unsurveyed Area' (6C090 MLT=005) shall be labeled with* legends spaced every 50 mm along the boundary line, with type positioned 1 mm away from the line. Labels should be on the inside of the area reading from right to left, or bottom to top if boundary is vertical. Do not place text around sharp corners.

L-4752 Label for oilfield with unknown limits (6C090, MLT=018, COD=002) shall be placed parallel to south neatline in center of area. It may be moved up or down, right or left, up to 30 mm to avoid overprints with platforms.

L-4753 Type placement for areas < 100 sq. cm. Type shall be centered in area reading from left to right.

If longer of two axes is North-South +/- 20 degrees or East-West +/- 20 degrees, type is parallel to south neatline.
(a) If LEN < WID times two, type shall be placed on two approximately equal lines without splitting words.
(b) If LEN >= WID times two, and major axis is East-West +/- 20 degrees, type shall be placed on one line.
(c) If LEN >= WID times two, and major axis is North-South +/- 20 degrees, type shall be placed with each word on a separate line.
If longer of two axes is more than 20 degrees from either North-South or East-West, and LEN < WID times two, type shall be parallel to south neatline and on two approximately equal lines without splitting words
If longer of two axes is more than 20 degrees from either North-South or East-West, and LEN >= WID times two, type shall be placed parallel to the major axis on one line.e to be placed inside area, place type outside area, using Rule L-4722.

R-2290 When MLT=001 (Other), HOC shall be 005 (Natural) if the limit is associated with depths or other physical obstructions. HOC shall be 004 (Man-made) when the limit has no permanent physical obstructions.

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

R-2985 Minimum width for maritime limit symbols (6C090), other than pilot boarding areas (MLT=019), shall be 4 mm at chart scale.

R-2987 If oil or gas fields (6C090, MLT=018) appear on a chart, the following note is shown in the margin or land area.

NOTE
OIL AND GAS FIELDS
The limit of development areas are charted around certain fields. Vessels, subsea craft and divers may be engaged in constructing and servicing installations within these areas. Other vessels are strongly advised to keep outside the charted limits. Platforms and tanker moorings generally show all or some of the following Lights: Mo (U) W 15s 10 or 15M, Mo (U) R 15s 2M, aircraft obstruction Lights; and sound fog signals: Mo (U) 30s. Unauthorized navigation is prohibited within 500 meters of structures, and of subsea production wells marked by buoys. Maneuvering tankers should be given a wide berth.

This note is not combined with other notes. Type 9 point (title) and 7 point (text) Swiss 742.
Color is Black SPC-58600.

R-3703 HOC and TXT attributes are used when MLT=001 (Other). TXT shall be worded in the form of a label that will appear on the symbol for MLT=001. PBV is used when MLT=019 (Pilot Boarding Area). COD and NAM are used when MLT=018 (Oil /Gas Field). OPS is used when MLT=004 (Spoil Area), or when MLT=015 (Dumping Ground for Hazardous Material). PRO is used when MLT=015 (Dumping Ground for Hazardous Material). If PRO is 019 (Other), a TXT label replaces the PRO label, and is used to label the hazardous material being dumped.

MARITIME LIMIT...6C090 (LINE)

FEATURE: MARITIME LIMIT...6C090 (LINE)

L-4714 Boundary labels shall be positioned 1 mm away from and parallel to the boundary line. Type shall read left to right, or bottom to top if the axis is vertical. Labels shall be placed INSIDE the area the boundary delimits.

R-2762 DMA Charts showing the US Exclusive Economic Zone shall show this limit in the same geographic position as shown by the authoritative NOS source.

MARITIME LIMIT...6C090 (POINT)

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

MEASURED DISTANCE LINE...6C100 (LINE)

D-7012 Break line symbol in water area for overprinting point symbol with the same color. Leave space 0.5 mm on each side of the point symbol. Do not displace either the line symbol or the point symbol. Point symbols may overprint line symbols of a different color.

L-4886 Labels are positioned 1 mm away from and parallel to the line. "Measured Distance" is placed above the line, or to the left, if the line is vertical. LOR, UNI and BRR labels are placed below the line, or to the right, if the line is vertical. Type reads left to right, or bottom to top if line is vertical.

Labels shall be centered in the middle of the line, if possible, but may be moved sideways to avoid overprints. "Measured Distance" and LOR, UNI, and BRR type should be kept together if possible.

If space is limited, thin type in the following priority:
1. Delete "Measured Distance" first
2. Delete BRR second.
Do not delete LOR or UNI.

MINE DANGER AREA...6C110 (AREA)

L-4715 Type sizes for Maritime Limits and areas:
8 point - < 8 sq. cm.
10 point - >= 8 and < 12 sq. cm.
12 point - >= 12 and < 24 sq. cm.
14 point - >= 24 and < 100 sq. cm.
8 point - >= 100 sq. cm.

Type placement for areas >= 100 sq. cm. to < 500 sq. cm.
Two labels are shown on approximately opposite sides of the area, preferably top and bottom.

Type placement for areas >= 500 sq. cm.
Labels are placed at approximately 250 mm. interval around the perimeter of the feature.

Do not place labels around sharp corners (interior angle <135°), or along chart neatlines. Place type 1 mm away and parallel to area limit line, reading left to right, or bottom to top if limit line is vertical. Type is placed on the INSIDE of the area.

FEATURE: MINE DANGER AREA...6C110 (AREA)

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4753 Type placement for areas < 100 sq. cm. Type shall be centered in area reading from left to right.

If longer of two axes is North-South +/- 20 degrees or East-West +/- 20 degrees, type is parallel to south neatline.
(a) If LEN < WID times two, type shall be placed on two approximately equal lines without splitting words.
(b) If LEN >= WID times two, and major axis is East-West +/- 20 degrees, type shall be placed on one line.
(c) If LEN >= WID times two, and major axis is North-South +/- 20 degrees, type shall be placed with each word on a separate line.
If longer of two axes is more than 20 degrees from either North-South or East-West, and LEN < WID times two, type shall be parallel to south neatline and on two approximately equal lines without splitting words
If longer of two axes is more than 20 degrees from either North-South or East-West, and LEN >= WID times two, type shall be placed parallel to the major axis on one line.e to be placed inside area, place type outside area, using Rule L-4722.

L-4756 Open areas between adjacent Mine Danger Areas (6C110) shall be shown as "MINESWEPT CHANNEL" (6C165, RTT=008) if cartographic or other source material confirms that the area has been swept for mines. Type placement for the MINESWEPT CHANNEL labels shall be in the following priority:
-Place in the center of the mine swept area, parallel to centerline of the mine swept area, reading from left to right, or from bottom to top if vertical:
- Shifted off of but parallel to the centerline of the mine swept area to avoid overprints with other symbols with the same color;
-If the mine swept area is too narrow to place type inside the area, place type outside area parallel to the top boundary, and 1 mm away from the boundary reading from left to right, or from bottom to top if vertical.
-Shifted along the boundary to avoid overprints with other symbols of the same color.
- Shifted away from the boundary, to a maximum distance of 6 mm at chart scale, to avoid overprints with other symbols of the same color.
If the mine swept area (6C165, RTT=008) is also a dredged channel (6C040), the type placement of type for the channel symbol shall take precedence over type for the mine swept area.

O-3413 If danger from mines is significant, based on ancillary data, cautions on source charts, or other available information, show mine danger area (6C110) as maintained minefield (MAS=001) even if the field is no longer maintained.

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

FEATURE: MINE DANGER AREA...6C110 (AREA)

R-2809 The following cautions shall be shown on charts showing Mine Danger Areas (6C110). If the minefield is a maintained minefield (MAS=001), the following caution is shown:

CAUTION
Mariners should stay out of the area indicated because of the presence of mines. See Annual NM 1 (36).

If the area is a former Mine Danger Area no longer maintained (MAS=002), the following caution is shown:

CAUTION
Mariners are warned not to anchor, trawl, ground, or conduct other bottom activities because of the residual danger of mines on the bottom. See Annual NM 1 (36).

The cautions shown above may have to be modified to provide additional or different information, based on ancillary sources such as Sailing Directions or cautions shown on source charts.

MINE DANGER AREA...6C110 (POINT)

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

O-3413 If danger from mines is significant, based on ancillary data, cautions on source charts, or other available information, show mine danger area (6C110) as maintained minefield (MAS=001) even if the field is no longer maintained.

R-2809 The following cautions shall be shown on charts showing Mine Danger Areas (6C110). If the minefield is a maintained minefield (MAS=001), the following caution is shown:

CAUTION
Mariners should stay out of the area indicated because of the presence of mines. See Annual NM 1 (36).

If the area is a former Mine Danger Area no longer maintained (MAS=002), the following caution is shown:

CAUTION
Mariners are warned not to anchor, trawl, ground, or conduct other bottom activities because of the residual danger of mines on the bottom. See Annual NM 1 (36).

The cautions shown above may have to be modified to provide additional or different information, based on ancillary sources such as Sailing Directions or cautions shown on source charts.

PROHIBITED AREA...6C120 (AREA)

FEATURE: PROHIBITED AREA...6C120 (AREA)

L-4715 Type sizes for Maritime Limits and areas:
8 point - < 8 sq. cm.
10 point - >= 8 and < 12 sq. cm.
12 point - >= 12 and < 24 sq. cm.
14 point - >= 24 and < 100 sq. cm.
8 point - >= 100 sq. cm.

Type placement for areas >= 100 sq. cm. to < 500 sq. cm.
Two labels are shown on approximately opposite sides of the area, preferably top and bottom.

Type placement for areas >= 500 sq. cm.
Labels are placed at approximately 250 mm. interval around the perimeter of the feature.

Do not place labels around sharp corners (interior angle <135°), or along chart neatlines. Place type 1 mm away and parallel to area limit line, reading left to right, or bottom to top if limit line is vertical. Type is placed on the INSIDE of the area.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4753 Type placement for areas < 100 sq. cm. Type shall be centered in area reading from left to right.

If longer of two axes is North-South +/- 20 degrees or East-West +/- 20 degrees, type is parallel to south neatline.
(a) If LEN < WID times two, type shall be placed on two approximately equal lines without splitting words.
(b) If LEN >= WID times two, and major axis is East-West +/- 20 degrees, type shall be placed on one line.
(c) If LEN >= WID times two, and major axis is North-South +/- 20 degrees, type shall be placed with each word on a separate line.
If longer of two axes is more than 20 degrees from either North-South or East-West, and LEN < WID times two, type shall be parallel to south neatline and on two approximately equal lines without splitting words
If longer of two axes is more than 20 degrees from either North-South or East-West, and LEN >= WID times two, type shall be placed parallel to the major axis on one line.e to be placed inside area, place type outside area, using Rule L-4722.

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

PROHIBITED AREA...6C120 (POINT)

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

RADAR REFERENCE LINE...6C130 (LINE)

FEATURE: RADAR REFERENCE LINE...6C130 (LINE)

L-4757 Type shall be placed parallel to and 1 mm above line, reading from left to right, or parallel to and 1 mm to the left of line, reading from bottom to top, if line is vertical. "Ra" is repeated every 150 mm along line. BRR is shown once for each straight line segment on the track. It is centered along line, but may be moved sideways to avoid overprint. If straight segment is too short to show BRR, BRR shall be omitted.

If radar reference line (6C130) corresponds to a recommended track (6C165, RTT=002 or 003), "Ra" may be moved sideways to avoid conflict with recommended track type, and purple dashed line of the radar reference line symbol is deleted.

RESTRICTED AREA...6C150 (AREA)

L-4715 Type sizes for Maritime Limits and areas:
8 point - < 8 sq. cm.
10 point - >= 8 and < 12 sq. cm.
12 point - >= 12 and < 24 sq. cm.
14 point - >= 24 and < 100 sq. cm.
8 point - >= 100 sq. cm.

Type placement for areas >= 100 sq. cm. to < 500 sq. cm.
Two labels are shown on approximately opposite sides of the area, preferably top and bottom.

Type placement for areas >= 500 sq. cm.
Labels are placed at approximately 250 mm. interval around the perimeter of the feature.

Do not place labels around sharp corners (interior angle <135°), or along chart neatlines. Place type 1 mm away and parallel to area limit line, reading left to right, or bottom to top if limit line is vertical. Type is placed on the INSIDE of the area.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4753 Type placement for areas < 100 sq. cm. Type shall be centered in area reading from left to right.

If longer of two axes is North-South +/- 20 degrees or East-West +/- 20 degrees, type is parallel to south neatline.
(a) If LEN < WID times two, type shall be placed on two approximately equal lines without splitting words.
(b) If LEN >= WID times two, and major axis is East-West +/- 20 degrees, type shall be placed on one line.
(c) If LEN >= WID times two, and major axis is North-South +/- 20 degrees, type shall be placed with each word on a separate line.
If longer of two axes is more than 20 degrees from either North-South or East-West, and LEN < WID times two, type shall be parallel to south neatline and on two approximately equal lines without splitting words
If longer of two axes is more than 20 degrees from either North-South or East-West, and LEN >= WID times two, type shall be placed parallel to the major axis on one line.e to be placed inside area, place type outside area, using Rule L-4722.

L-4758 Descriptive type for cables and pipelines (6C150, DTC=015) shall be parallel to the direction of the pipe or cable, i.e., bank to bank, rather than aligned with the body of water. Type may be shown on more than one line if necessary.

FEATURE: RESTRICTED AREA...6C150 (AREA)

L-4826 Labeling of pipeline areas (6C150, DTC=013):
If width <10 mm, PRO label shall be placed in the center of the area, parallel to the major axis, reaing left to right, or bottom to top if major axis is vertical. Type may be moved sideways to avoid overprints. If WID >=10 mm, PRO label shall be placed parallel to and 1 mm away from the boundary, inside the area adjacent to pipeline portion of the symbol. Both sides of the area shall be labeled. If line is > 150 mm it shall be labeled every 100 mm.

L-4862 Pipelines (1L160), pipeline areas (6C150, DTC=013), and cable and pipeline areas (6C150, DTC=015) shall show a label for the following PRO values, using the label shown below:

If PRO=006, label "Chem"
If PRO=012, label "Gas"
If PRO=013, label "Gasoline"
If PRO=018, label "Oil"
If PRO=027, label "Water"

No PRO label is shown for PRO=000 Unknown, PRO=019 Other, or PRO=035 Sewage.

R-2218 If the boundary of an area showing alternating T shaped dashes and other graphic components joins with a similar line, for example, if a boundary closes on itself, number of dashes or graphic components shown in a series (usually three) shall be reduced so that no more than four of any one kind of symbol component are shown in a row.

R-2800 When the boundary of an areal symbol crosses or overprints the shoreline, the boundary overprinting the shoreline or on land is deleted.

R-2846 Fish symbol (6C150 DTC=014) is repeated every 30 mm. For closed area, if first and last fish symbols are within 150 mm of each other, do not show last fish symbol, and continue T shaped line through the space.

R-2847 Power cable areas (6C150, DTC=012, USE=053) shall have an electric flash (Posicut #142) placed in the area to identify power cables. The posicut shall be positioned as follows, depending on the size of the area: Length <= 40 mm at chart scale - center one posicut in the center of the area. Length > 40 mm and width <= 40 mm at chart scale - place one posicut every 30 mm at chart scale centered between the long sides of the features. Width > 40 mm at chart scale - place one posicut every 30 mm along each boundary line, 5 mm to the inside of the line.

R-2937 Charts shall have the following caution notes shown in the margin if pipelines (1L160), pipeline areas (6C150, DTC=013), or cable and pipeline areas (6C150, DTC=015) are shown on the chart, and products are chemicals (PRO=006), gas (PRO=012), gasoline (PRO=013), or oil (PRO=018): .

CAUTION
Mariners risk prosecution if they anchor or trawl near a pipeline and so damage it. (PRO) leaking from a damaged pipeline could cause fire or loss of a vessel's buoyancy.

The product name (PRO) is indicated in the text of the note. PRO006 is shown in plural, i.e., "Chemicals." See Notes and Cautions section of product specifications for color, type size, type style, and other information regarding caution notes.

R-3678 RAA is used when DTC=016 (Other) to describe the nature of the restriction imposed on the area. It should be worded in the form of a label, to appear on the symbol for DTC=016.

R-9034 PRO is used when DTC=013 (Pipeline Area), or DTC=015 (Cables and Pipelines). USE is used when DTC=012 (Cable Area), or DTC=015 (Cables and Pipelines).

RESTRICTED AREA...6C150 (LINE)

FEATURE: RESTRICTED AREA...6C150 (LINE)

L-4743 If feature type is linear, the label hierarchy is:
(1) Label shall be placed 1 mm above feature, centered.
(2) Top of label shall be placed 1 mm below feature, centered.
(3) Label may be displaced along the feature; use two labels if feature length 150 mm or greater.
(4) Do not label across shoreline (2A010 or 2H075).

L-4758 Descriptive type for cables and pipelines (6C150, DTC=015) shall be parallel to the direction of the pipe or cable, i.e., bank to bank, rather than aligned with the body of water. Type may be shown on more than one line if necessary.

L-4862 Pipelines (1L160), pipeline areas (6C150, DTC=013), and cable and pipeline areas (6C150, DTC=015) shall show a label for the following PRO values, using the label shown below:

If PRO=006, label "Chem"
If PRO=012, label "Gas"
If PRO=013, label "Gasoline"
If PRO=018, label "Oil"
If PRO=027, label "Water"

No PRO label is shown for PRO=000 Unknown, PRO=019 Other, or PRO=035 Sewage.

R-2219 Cable areas (6C150, DTC=012) symbolized as line symbols shall be printed so the centerline of the cable symbol (Posicut #56) follows the centerline of the cable area. The linear symbol is created by adjacent and joined posicuts repeated for the length of the centerline of the area.

R-2220 The electric flash symbol (Posicut #142) shown on power cable areas (6C150, DT=C012, USE=053) symbolized as line symbols shall be printed at 50 mm intervals along the line symbol. The line symbol shall be broken for 1 mm on each side of the electric flash.

R-2937 Charts shall have the following caution notes shown in the margin if pipelines (1L160), pipeline areas (6C150, DTC=013), or cable and pipeline areas (6C150, DTC=015) are shown on the chart, and products are chemicals (PRO=006), gas (PRO=012), gasoline (PRO=013), or oil (PRO=018): .

CAUTION
Mariners risk prosecution if they anchor or trawl near a pipeline and so damage it. (PRO) leaking from a damaged pipeline could cause fire or loss of a vessel's buoyancy.

The product name (PRO) is indicated in the text of the note. PRO006 is shown in plural, i.e., "Chemicals." See Notes and Cautions section of product specifications for color, type size, type style, and other information regarding caution notes.

R-9034 PRO is used when DTC=013 (Pipeline Area), or DTC=015 (Cables and Pipelines). USE is used when DTC=012 (Cable Area), or DTC=015 (Cables and Pipelines).

RESTRICTED AREA...6C150 (POINT)

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

R-3678 RAA is used when DTC=016 (Other) to describe the nature of the restriction imposed on the area. It should be worded in the form of a label, to appear on the symbol for DTC=016.

ROUNDABOUT...6C160 (AREA)

FEATURE: ROUNDABOUT...6C160 (AREA)

R-2821 When a traffic separation scheme (6C160, 6C180, 6C165) is portrayed on a nautical chart, a note is shown in black indicating whether or not it has been adopted by the International Marine Organization. The following note is shown if the:

(1) If the traffic separation scheme has been adopted by the IMO.

NOTE
The Traffic Separation Scheme(s) on this chart is adopted by the International Maritime Organization (IMO).

(2) If the traffic separation scheme has not been adopted by the IMO.

NOTE
The Traffic Separation Scheme(s) on this chart is not adopted by the International Maritime Organization (IMO).

R-2848 Break outer boundary of roundabout (6C160) where traffic separation schemes (6C180) enter and exit the roundabout. Arrows proceed in a counterclockwise direction and may be moved to avoid overprints. At least two arrows shall be shown, with more arrows shown as the circumference of the travelled lane increases. If the width of the traffic lane part of the roundabout is less than 4 mm, delete arrows.

ROUNDABOUT...6C160 (LINE)

R-2821 When a traffic separation scheme (6C160, 6C180, 6C165) is portrayed on a nautical chart, a note is shown in black indicating whether or not it has been adopted by the International Marine Organization. The following note is shown if the:

(1) If the traffic separation scheme has been adopted by the IMO.

NOTE
The Traffic Separation Scheme(s) on this chart is adopted by the International Maritime Organization (IMO).

(2) If the traffic separation scheme has not been adopted by the IMO.

NOTE
The Traffic Separation Scheme(s) on this chart is not adopted by the International Maritime Organization (IMO).

R-2848 Break outer boundary of roundabout (6C160) where traffic separation schemes (6C180) enter and exit the roundabout. Arrows proceed in a counterclockwise direction and may be moved to avoid overprints. At least two arrows shall be shown, with more arrows shown as the circumference of the travelled lane increases. If the width of the traffic lane part of the roundabout is less than 4 mm, delete arrows.

ROUNDABOUT...6C160 (POINT)

R-2271 The Roundabout Arrows (6C160, TSP=001) shall be curved when surrounding a roundabout (6C180P001) to conform to the circumference of the traffic separation scheme roundabout.

FEATURE: ROUNDABOUT...6C160 (POINT)

R-2821 When a traffic separation scheme (6C160, 6C180, 6C165) is portrayed on a nautical chart, a note is shown in black indicating whether or not it has been adopted by the International Marine Organization. The following note is shown if the:

(1) If the traffic separation scheme has been adopted by the IMO.

NOTE
The Traffic Separation Scheme(s) on this chart is adopted by the International Maritime Organization (IMO).

(2) If the traffic separation scheme has not been adopted by the IMO.

NOTE
The Traffic Separation Scheme(s) on this chart is not adopted by the International Maritime Organization (IMO).

R-2848 Break outer boundary of roundabout (6C160) where traffic separation schemes (6C180) enter and exit the roundabout. Arrows proceed in a counterclockwise direction and may be moved to avoid overprints. At least two arrows shall be shown, with more arrows shown as the circumference of the travelled lane increases. If the width of the traffic lane part of the roundabout is less than 4 mm, delete arrows.

ROUTE...6C165 (AREA)

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4747 Type placement order of preference:
(1) Centered in area, parallel to longer of two axes, reading left to right, or bottom to top if longer axis of the feature is vertical.
(2) Shifted sideways to avoid overprints.
(3) Placed outside area parallel and 1 mm away from top boundary, reading left to right, or parallel to and 1 mm away from left boundary, reading bottom to top, if the major axis is vertical, centered with respect to the major axis.
(4) Shifted sideways to avoid overprints.
(5) Shifted up to avoid overprints, to a maximum distance of 6 mm.

L-4770 Labeling areas based on width:

Type Size:	If Width Is:
08 point	< 8 mm
10 point	>= 8 mm < 18 mm
12 point	>= 18 mm < 30 mm
14 point	>= 30 mm

Type is centered in area and repeated every 10 cm.

R-2205 If adjacent areas of this feature have different depths (HDP), the common boundary shall be shown with the lineweight reduced to half (0.2 mm changed to 0.1 mm), dash lengths of 2.0 mm and dash spaces of 0.5 mm. Color remains the same.

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2758 If a mineswept area (6C165, RTT=008) boundary overprints a mine danger area (6C110) boundary, do not symbolize the overprinting mineswept area boundary.

ROUTE...6C165 (LINE)

D-7012 Break line symbol in water area for overprinting point symbol with the same color. Leave space 0.5 mm on each side of the point symbol. Do not displace either the line symbol or the point symbol. Point symbols may overprint line symbols of a different color.

FEATURE: ROUTE...6C165 (LINE)

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4769 BRR or BRS shall be printed above track, 1 mm away from and parallel to it. Type shall be read from left to right, or bottom to top if track is vertical. One attribute shall be shown for each straight line segment, centered on that segment, but can be moved sideways to avoid conflicting with arrows or other chart detail.

BRS is used on one-way tracks (EXS=022) to indicate the bearing steered by a ship following the track in the direction indicated.

BRR is used on two-way tracks (EXS=023) with the bearing from seaward, i.e.., when proceding from seaward toward land, or in the direction of buoyage, followed by its reciprocal bearing, except as follows:

When a two way route (EXS=023) is of such length that reciprocal bearings are shown at both extremities, i.e., a straight line segment over 25 cm long, the bearing quoted first shall be the bearing followed by a ship joining the track at that extremity.

L-4813 Descriptive terms, e.g., "Canal" shall be shown if the name is not known. If the descriptive word appears in the name, for example, "PANAMA CANAL", the descriptive type shall not be shown, i.e., do not show "Panama Canal Canal".

L-4880 To reduce translation difficulties, a "not equal to" sign, i.e., a slash (/) overprinting an equal sign (=), or Posicut #224, shall be used in the Description of Reference Points (DRP) attribute to indicate any two objects in line. The DRP attribute should use this symbol in place of the words "in line", e.g., "2 Bns ≠" rather than "2 Bns in line"

R-2209 If two line features of the same FACS code meet end to end, and have different depths (HDP), a short line is shown centered on the point of intersection. It bisects the angle at which the line features meet (i.e., if the lines meet at 180° angle the bisecting line is perpendicular to the meeting line features). The bisecting line is 0.1 mm lineweight, length is 3.0 mm, and it is shown in the same color as the line features.

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2820 Tracks of value only to local fishing boats or pleasure craft should not be included on nautical charts except in the Bahama Islands, Nova Scotia-Newfoundland, and Bermuda areas. This exception applies to all charts of 1:300,000 scale and larger.

FEATURE: ROUTE...6C165 (LINE)

R-2854 Two way tracks that are not marked by fixed objects (6C165, EXS=023, ATN=002) are represented by arrows pointing in opposite directions. Each pair of arrows is separated by two dashes. No arrows are shown on two way tracks that are marked by fixed objects (6C165, EXS=-23, ATN=001), except for those showing depths (HDP).

If depth is known, HDP is placed between the arrowheads and the track line is deleted between the arrow points, to avoid overprinting HDP.

One way tracks (6c165, EXS=022) are represented by a single arrow pointing in the direction of traffic flow. If depth is known, the HDP is placed 2 mm behind the point of the arrow and the track line is deleted from the arrow to 1 mm past the type.

Deep water tracks (6C165, RTT=003) shall have a "DW" inserted before the arrow, approximately 25mm in front of the arrowhead.

Representation of arrows on tracks:
(1) Each segment of Tracks that has a different depth shall have one arrows /HDP set as described above centered approximately in the center of the segment. Type /arrows shall be moved sideways along track to avoid being placed around sharp corners (interior angle < 135°).

Additional arrows without type shall be spaced along Tracks at 100 mm interval, or once for each straight line segment over 15 mm long, whichever is less.

(2) Tracks without depths shall show arrows, or pairs of arrows, on two way tracks, once every 100 mm along the track, or once for each straight line segment over 15 mm long, whichever is less.

ROUTE...6C165 (POINT)

R-2289 Arrows showing the recommended direction of traffic flow (RTT=006) should be staggered laterally, to avoid implying a specific track to follow, and to reduce the risk of overtaking encounters.

SAFETY FAIRWAY...6C170 (AREA)

L-4747 Type placement order of preference:
(1) Centered in area, parallel to longer of two axes, reading left to right, or bottom to top if longer axis of the feature is vertical.
(2) Shifted sideways to avoid overprints.
(3) Placed outside area parallel and 1 mm away from top boundary, reading left to right, or parallel to and 1 mm away from left boundary, reading bottom to top, if the major axis is vertical, centered with respect to the major axis.
(4) Shifted sideways to avoid overprints.
(5) Shifted up to avoid overprints, to a maximum distance of 6 mm.

L-4772 Type size for Safety Fairway (6C170):

Type Size:	If Width Is:
08 point	< 8 mm
10 point	>= 8 mm < 10 mm
12 point	>= 10 mm < 20 mm
14 point	>= 20 mm

R-2986 Symbol perimeter shall be broken where ship traffic enters and exits the feature. Feature boundary is symbolized only on those edges where ship traffic does not enter or exit the feature.

SAFETY FAIRWAY...6C170 (LINE)

L-4743 If feature type is linear, the label hierarchy is:
(1) Label shall be placed 1 mm above feature, centered.
(2) Top of label shall be placed 1 mm below feature, centered.
(3) Label may be displaced along the feature; use two labels if feature length 150 mm or greater.
(4) Do not label across shoreline (2A010 or 2H075).

FEATURE: SWEPT AREA...6C177 (AREA)

SWEPT AREA...6C177 (AREA)

L-4702 Show HDP or HDH value in whole meters if decimeter value is 0; otherwise show the decimeter value as a subscript to the meter value.

L-4771 Type sizes for Swept Areas (6C177):

Type Size:	If Width Is:
8 point	<= 8 mm
10 point	> 8 mm <= 10 mm
12 point	> 10 mm <= 18 mm
14 point	> 18 mm

Large areas, 30 x 60 mm wide, with irregular shape, < 60% of a minimum bounding rectangle covered by area, shall be labeled in several places so it is clear to the user what the depth of the area is.

Areas that are too small to be labeled with 8 point type without overprinting area limit lines shall be aggregated into larger adjoining areas swept to a lesser depth than the small area. The larger adjoining area chosen shall be the one with the closest shallower depth value.

If the small area is shallower than the surrounding areas, the swept depth label shall be placed outside the area with a Leading Line used to indicate which area the depth value refers to.

R-2222 VDC is used to record the sounding datum to which a hydrographic depth (HDP), drying height (HDH), or the high water datum to which a safe overhead clearance (SOC) is referenced. If the hydrographic depth (HDP), drying height (HDH), or safe overhead clearance (SOC) is unknown or not applicable, VDC is not applicable. VDR is used to record the name of the vertical datum when VDC is 023 (Other). VDR is not applicable "NA" when VDC is any value except 023.

R-2822 If two area symbols of the same type share a common boundary, the common boundary shall be shown with the lineweight reduced to 0.25 mm, dash lengths reduced to 2.5 mm, and dash spaces reduced to 0.6 mm. Color remains the same.

R-2984 If a swept area (6C177) falls on a chart, show this note in the margin or an open water area. Do not combine with other notes.

NOTE
The area tinted green has been swept in
(DAT) to a depth indicated thus: 40.

If multiple swept areas with different dates appear on the same chart, the following note, showing the full range of dates, shall be used instead.

NOTE
Areas tinted in green have been swept in
(DAT)-(DAT)to a depth indicated thus: 40

Place date of wire drag in the note. The "40" in the notes above is an example only, and a depth within the range of depths shown on the feature should be selected. The wire drag underline, as shown on the feature symbol, should also be placed under this number. Color is Green SPC-52813. Type for the note is 12 and 10 point Swiss 742. Type for the swept depth number is 10 point Swiss 742 italic.

V-1067 If DAT is unknown, omit DAT window.

TRAFFIC SEPARATION SCHEME...6C180 (AREA)

O-3426 If the width of a traffic separation zone is > 3 mm at chart scale, TSP shall be 003 (Separation Zone-Area). If the width of a separation zone is <= 3 mm at chart scale, TSP shall be 004 (Separation Zone-Line).

FEATURE: TRAFFIC SEPARATION SCHEME...6C180 (AREA)

R-2821 When a traffic separation scheme (6C160, 6C180, 6C165) is portrayed on a nautical chart, a note is shown in black indicating whether or not it has been adopted by the International Marine Organization. The following note is shown if the:

(1) If the traffic separation scheme has been adopted by the IMO.

NOTE
The Traffic Separation Scheme(s) on this chart is adopted by the International Maritime Organization (IMO).

(2) If the traffic separation scheme has not been adopted by the IMO.

NOTE
The Traffic Separation Scheme(s) on this chart is not adopted by the International Maritime Organization (IMO).

R-2856 The outer limits (TSP=002) and /or inner separation zone (TSP=003 or 004) of a traffic separation scheme (6C180) shall not be shown if natural obstacles or other features ie. rocks, reefs, islands, etc. clearly define the traffic pattern.
Arrows in the traffic lanes shall be positioned parallel to the flow of traffic, and randomly displaced laterally from the center of the lane to avoid giving the impression of a specific track that must be followed.

When a traffic separation scheme, (6C180) is adjacent to an inshore traffic zone (6C075), the boundary between them shall be shown as a separation zone, plotted at chart scale, but with a minimum width of 3 mm. The area covered by the zone is taken from the inshore traffic zone, NOT the traffic separation scheme.

TRAFFIC SEPARATION SCHEME...6C180 (LINE)

O-3426 If the width of a traffic separation zone is > 3 mm at chart scale, TSP shall be 003 (Separation Zone-Area). If the width of a separation zone is <= 3 mm at chart scale, TSP shall be 004 (Separation Zone-Line).

R-2821 When a traffic separation scheme (6C160, 6C180, 6C165) is portrayed on a nautical chart, a note is shown in black indicating whether or not it has been adopted by the International Marine Organization. The following note is shown if the:

(1) If the traffic separation scheme has been adopted by the IMO.

NOTE
The Traffic Separation Scheme(s) on this chart is adopted by the International Maritime Organization (IMO).

(2) If the traffic separation scheme has not been adopted by the IMO.

NOTE
The Traffic Separation Scheme(s) on this chart is not adopted by the International Maritime Organization (IMO).

R-2856 The outer limits (TSP=002) and /or inner separation zone (TSP=003 or 004) of a traffic separation scheme (6C180) shall not be shown if natural obstacles or other features ie. rocks, reefs, islands, etc. clearly define the traffic pattern.
Arrows in the traffic lanes shall be positioned parallel to the flow of traffic, and randomly displaced laterally from the center of the lane to avoid giving the impression of a specific track that must be followed.

When a traffic separation scheme, (6C180) is adjacent to an inshore traffic zone (6C075), the boundary between them shall be shown as a separation zone, plotted at chart scale, but with a minimum width of 3 mm. The area covered by the zone is taken from the inshore traffic zone, NOT the traffic separation scheme.

TRAFFIC SEPARATION SCHEME...6C180 (POINT)

FEATURE: TRAFFIC SEPARATION SCHEME...6C180 (POINT)

R-2816 Arrows shall not be shown where separation schemes join or cross each other, to avoid implying priority of one lane over another. This rule does not apply to schemes joining at a roundabout (6C160).

R-2821 When a traffic separation scheme (6C160, 6C180, 6C165) is portrayed on a nautical chart, a note is shown in black indicating whether or not it has been adopted by the International Marine Organization. The following note is shown if the:

(1) If the traffic separation scheme has been adopted by the IMO.

NOTE

The Traffic Separation Scheme(s) on this chart is adopted by the International Maritime Organization (IMO).

(2) If the traffic separation scheme has not been adopted by the IMO.

NOTE

The Traffic Separation Scheme(s) on this chart is not adopted by the International Maritime Organization (IMO).

R-2856 The outer limits (TSP=002) and /or inner separation zone (TSP=003 or 004) of a traffic separation scheme (6C180) shall not be shown if natural obstacles or other features ie. rocks, reefs, islands, etc. clearly define the traffic pattern.
Arrows in the traffic lanes shall be positioned parallel to the flow of traffic, and randomly displaced laterally from the center of the lane to avoid giving the impression of a specific track that must be followed.

When a traffic separation scheme, (6C180) is adjacent to an inshore traffic zone (6C075), the boundary between them shall be shown as a separation zone, plotted at chart scale, but with a minimum width of 3 mm. The area covered by the zone is taken from the inshore traffic zone, NOT the traffic separation scheme.

WORK IN PROGRESS AREA...6C210 (AREA)

L-4706 If the attribute value is not known, or the attribute value for none or not applicable, delete window and condense remaining windows.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4753 Type placement for areas < 100 sq. cm. Type shall be centered in area reading from left to right.

If longer of two axes is North-South +/- 20 degrees or East-West +/- 20 degrees, type is parallel to south neatline.
(a) If LEN < WID times two, type shall be placed on two approximately equal lines without splitting words.
(b) If LEN >= WID times two, and major axis is East-West +/- 20 degrees, type shall be placed on one line.
(c) If LEN >= WID times two, and major axis is North-South +/- 20 degrees, type shall be placed with each word on a separate line.
If longer of two axes is more than 20 degrees from either North-South or East-West, and LEN < WID times two, type shall be parallel to south neatline and on two approximately equal lines without splitting words
If longer of two axes is more than 20 degrees from either North-South or East-West, and LEN >= WID times two, type shall be placed parallel to the major axis on one line.e to be placed inside area, place type outside area, using Rule L-4722.

FEATURE: WORK IN PROGRESS AREA...6C210 (AREA)

L-4774 If two work in progress areas (6C210) are within 20 mm of each other and the same COD (either both COD=001 or both COD=002), show only one legend with the later DAT attribute centered between the two features.

R-2857 If work in progress area (6C210) is extending the shoreline seaward (WPC=001, COD=001), the old shoreline is retained until the work is completed. Water tint is deleted from the area, but land tint is not extended into the area. If it is a feature under construction (WPC=002, COD=001), the coincident shoreline is deleted, and land tint is extended into the area.

WORK IN PROGRESS AREA...6C210 (LINE)

L-4706 If the attribute value is not known, or the attribute value for none or not applicable, delete window and condense remaining windows.

L-4774 If two work in progress areas (6C210) are within 20 mm of each other and the same COD (either both COD=001 or both COD=002), show only one legend with the later DAT attribute centered between the two features.

R-2857 If work in progress area (6C210) is extending the shoreline seaward (WPC=001, COD=001), the old shoreline is retained until the work is completed. Water tint is deleted from the area, but land tint is not extended into the area. If it is a feature under construction (WPC=002, COD=001), the coincident shoreline is deleted, and land tint is extended into the area.

MAGNETIC DISTURBANCE AREA...9C040 (AREA)

L-4705 Labeling areas, in order of preference:
(1) Centered in area on one line in the area, type is horizontal, reading left to right.
(2) Centered in area on one line in the area, oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(3) Centered in area on two approximately equal lines, without splitting a word, type is horizontal, reading left to right.
(4) Centered on two approximately equal lines without splitting a word, type is oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(5) Use Rule L-4722 for type placement if the area is too small to place the type inside the area.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

L-4737 Feature name /label shall be positioned parallel to lines of latitude and readable left to right.

MISCELLANEOUS CULTURAL FEATURE...9D012 (AREA)

L-4705 Labeling areas, in order of preference:
(1) Centered in area on one line in the area, type is horizontal, reading left to right.
(2) Centered in area on one line in the area, oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(3) Centered in area on two approximately equal lines, without splitting a word, type is horizontal, reading left to right.
(4) Centered on two approximately equal lines without splitting a word, type is oriented along the long axis of the feature, reading left to right, or bottom to top if axis is vertical.
(5) Use Rule L-4722 for type placement if the area is too small to place the type inside the area.

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

FEATURE: MISCELLANEOUS CULTURAL FEATURE...9D012 (AREA)

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

MISCELLANEOUS CULTURAL FEATURE...9D012 (LINE)

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4743 If feature type is linear, the label hierarchy is:
(1) Label shall be placed 1 mm above feature, centered.
(2) Top of label shall be placed 1 mm below feature, centered.
(3) Label may be displaced along the feature; use two labels if feature length 150 mm or greater.
(4) Do not label across shoreline (2A010 or 2H075).

MISCELLANEOUS CULTURAL FEATURE...9D012 (POINT)

L-4709 If attribute NAM is unknown, delete window and condense the remaining windows.

L-4722 Priority for type placement: 1-right center, 2-bottom center, 3-left center, 4-top center.
(A) Minimum distance from symbol - 1 mm.
(B) Maximum distance from symbol before choosing the next highest priority:
#1 4 mm measured to the West end
#2 4 mm measured to the North side (top)
#3 4 mm measured to the East end
#4 4 mm measured to the South side (bottom)

POINT OF CHANGE...9D015 (POINT)

R-2209 If two line features of the same FACS code meet end to end, and have different depths (HDP), a short line is shown centered on the point of intersection. It bisects the angle at which the line features meet (i.e., if the lines meet at 180° angle the bisecting line is perpendicular to the meeting line features). The bisecting line is 0.1 mm lineweight, length is 3.0 mm, and it is shown in the same color as the line features.

NAMED LOCATION...9D040 (AREA)

L-3608 Symbolized populated places shall be classified and labeled in accordance with five (5) categories which are to be determined as follows:
1. When complete and up-to-date population figures are available, they shall serve as the basis for the 5 categories.
2. The population figures of a town with the addition of enhanced importance due to being administrative centers, junctions of important Roads, rail center or another significant value to a military user.
3. When population figures are not available or are incomplete, the size of the Built-up Areas shall be a guide to basic classification.
4. Classification of populated places by class shall be shown by type size.
5. Population breakdown and the relative importance breakdown equivalent in culturally developed area:
1st class > 500,000.or 1st importance (PPL 1) 14 Pt Bold Condensed Upper Case
2nd class > 50,000 to <= 500,000...or 2nd importance (PPL 2) 10 Pt Bold Cond. Upper Case
3rd class > 10,000 to <= 50,000...or 3rd importance (PPL 3) 10 Pt Bold Cond. Upper/Lower
4th class > 5,000 to <= 10,000...or 4th importance (PPL 4) 10 Pt Condensed Upper/Lower
5th class <= 5,000.or 5th importance (PPL 5) 8 Pt Condensed Upper/Lower Case

FEATURE: NAMED LOCATION...9D040 (AREA)

L-3609 Population breakdown and the relative importance equivalent in an area not developed culturally:
1st class > 100,000..or 1st importance (PL 1) 14 Pt Bold Condensed Upper Case
2nd class > 50,000 to <= 100,000...or 2nd importance (PPL 2) 10 Pt Bold Cond. Upper Case
3rd class > 10,000 to <= 50,000...or 3rd importance (PPL 3) 10 Pt Bold Cond. Upper/Lower
4th class > 2,000 to <= 10,000...or 4th importance (PPL 4) 10 Pt Condensed Upper/Lower
5th class <= 2,000.or 5th importance (PPL 5) 8 Pt Condensed Upper/Lower Case

L-4827 Geographic names shall not be placed along the axis of deepest water in a confined area, such as a channel, fairway, etc.

L-4896 The following non-FACS features shall be named if name is known:
a. Non-tidal basin (an artificially enclosed area within which water can be maintained at a desired level to keep ships afloat while loading or discharging cargo, etc.). Water level is maintained by locks (2I030), or sluice gates (2I040), in IHO terminology, a "caisson". Symbolize name as if CSI=006, i.e. in italic type.
b. Tidal basin or tidal harbor (an enclosure in which the tide freely rises and falls, i.e., there is no lock or gate to regulate the water level. Symbolize name as if CSI=006, i.e., in italic type.

R-2845 On charts which contain names that do not necessarily reflect the officially recognized political status, the following disclaimer is shown when specified by the Board of Geographic Names.

Geographic names or their spellings do not necessarily reflect recognition of the political status of the area by the United States Government.

Additional information or instructions modifying this note may be contained in the names/boundaries/disclaimers notes source package. See notes and cautions section of product specifications.

NAMED LOCATION...9D040 (LINE)

L-3608 Symbolized populated places shall be classified and labeled in accordance with five (5) categories which are to be determined as follows:
1. When complete and up-to-date population figures are available, they shall serve as the basis for the 5 categories.
2. The population figures of a town with the addition of enhanced importance due to being administrative centers, junctions of important Roads, rail center or another significant value to a military user.
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5th class <= 2,000.or 5th importance (PPL 5) 8 Pt Condensed Upper/Lower Case

L-4827 Geographic names shall not be placed along the axis of deepest water in a confined area, such as a channel, fairway, etc.

L-4896 The following non-FACS features shall be named if name is known:
a. Non-tidal basin (an artificially enclosed area within which water can be maintained at a desired level to keep ships afloat while loading or discharging cargo, etc.). Water level is maintained by locks (2I030), or sluice gates (2I040), in IHO terminology, a "caisson". Symbolize name as if CSI=006, i.e. in italic type.
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NAMED LOCATION...9D040 (POINT)

L-3608 Symbolized populated places shall be classified and labeled in accordance with five (5) categories which are to be determined as follows:
1. When complete and up-to-date population figures are available, they shall serve as the basis for the 5 categories.
2. The population figures of a town with the addition of enhanced importance due to being administrative centers, junctions of important Roads, rail center or another significant value to a military user.
3. When population figures are not available or are incomplete, the size of the Built-up Areas shall be a guide to basic classification.
4. Classification of populated places by class shall be shown by type size.
5. Population breakdown and the relative importance breakdown equivalent in culturally developed area:
1st class > 500,000.or 1st importance (PPL 1) 14 Pt Bold Condensed Upper Case
2nd class > 50,000 to <= 500,000...or 2nd importance (PPL 2) 10 Pt Bold Cond. Upper Case
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4th class > 5,000 to <= 10,000...or 4th importance (PPL 4) 10 Pt Condensed Upper/Lower
5th class <= 5,000.or 5th importance (PPL 5) 8 Pt Condensed Upper/Lower Case

FEATURE: NAMED LOCATION...9D040 (POINT)

L-3609 Population breakdown and the relative importance equivalent in an area not developed culturally:
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4th class > 2,000 to <= 10,000...or 4th importance (PPL 4) 10 Pt Condensed Upper/Lower
5th class <= 2,000.or 5th importance (PPL 5) 8 Pt Condensed Upper/Lower Case

L-4827 Geographic names shall not be placed along the axis of deepest water in a confined area, such as a channel, fairway, etc.

L-4896 The following non-FACS features shall be named if name is known:
a. Non-tidal basin (an artificially enclosed area within which water can be maintained at a desired level to keep ships afloat while loading or discharging cargo, etc.). Water level is maintained by locks (2I030), or sluice gates (2I040), in IHO terminology, a "caisson". Symbolize name as if CSI=006, i.e. in italic type.
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TEXT DESCRIPTION...9D045 (AREA)

L-3809 Type style for labels:
-Features that are on the land, or above the surface of the water at high water (VRC=001) shall be labeled with vertical type. Included in this category are fixed aids to navigation in water areas.
-Features that are below the surface of the water at high water (VRC=004 or 008), and floating aids to navigation (Buoys), shall be labeled with italic type.

L-4893 If feature is in ruins, and not portrayed as a ruins (1L200), or by an EXS label, add the label "Ru" to the feature.

TEXT DESCRIPTION...9D045 (LINE)

L-3809 Type style for labels:
-Features that are on the land, or above the surface of the water at high water (VRC=001) shall be labeled with vertical type. Included in this category are fixed aids to navigation in water areas.
-Features that are below the surface of the water at high water (VRC=004 or 008), and floating aids to navigation (Buoys), shall be labeled with italic type.

L-4893 If feature is in ruins, and not portrayed as a ruins (1L200), or by an EXS label, add the label "Ru" to the feature.

TEXT DESCRIPTION...9D045 (POINT)

FEATURE: TEXT DESCRIPTION...9D045 (POINT)

L-3809 Type style for labels:
-Features that are on the land, or above the surface of the water at high water (VRC=001) shall be labeled with vertical type. Included in this category are fixed aids to navigation in water areas.
-Features that are below the surface of the water at high water (VRC=004 or 008), and floating aids to navigation (Buoys), shall be labeled with italic type.

L-4893 If feature is in ruins, and not portrayed as a ruins (1L200), or by an EXS label, add the label "Ru" to the feature.

L-4897 If hydrographic sources indicate that a port has pilotage services, but does not show a specific position for a pilot boarding area (6C090, MLT=019), label "Pilots" under the name (9D040) of the port.

L-4899 Miscellaneous labels occasionally may be found in association with marine navigational aids (2C). If a text label is shown on hydrographic source material, it should be considered significant for navigation. Examples are:
-A fog detection light, label "Fog Det Lt"
-A floodlit structure near navigable water, label "(Illiminated)"
-A daytime light, if character (COL) of light in the day is different from the character shown at night. Show daytime character, followed by "Day" in parentheses, for example:
(F 37m 11M Day)
-Unwatched light, with no standby or emergency arrangements, label "(U)"
-A temporary light or buoy, label "(temp)". If seasonal, include months, for example: "(Apr-Oct)"
-A fog light, if light is only shown in fog, or the light during fog is different from the character (COL) shown at other times, show character in fog, followed by "(in fog)", in parentheses. For example: Fl 5s (in fog)
-A privately maintained light or buoy, label "(priv)"
-RACONs occasionally will show a morse code identification, or an operating frequency, for example, "Racon (Z)", "Racon (Z) (10 cm)", "Racon (Z) (3 & 10 cm)" A RACON responding on a fixed frequency outside the marine band is labeled with an "F" in front of the label "RACON"

INDEX

CONCLUDING MATERIAL

Custodians:
DMA - MP

Preparing activity:
DMA - MP

(Project MCGT-0130)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing anivity must provide a reply wlthln 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER MIL-H-89201/3(DMA)	2. DOCUMENT DATE *(YYMMDD)* 950128

3. DOCUMENT TITLE
Military Specification for Harbor, Approach, and Coastal Charts, 1:50,001 to 1:100,000

4. NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed)*

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME *(Last, First, Middle Initial)*	b. ORGANIZATION	
c. ADDRESS *(Include Zip Code)*	d. TELEPHONE *(Include Area Code)* (1) Commercial (2) AUTOVON *(if applicable)*	7. DATE SUBMITTED *(YYMMDD)*

8. PREPARING ACTIVITY

a. NAME	b. TELEPHONE *(Include Area Code)* (1) Commercial	(2) AUTOVON
Defense Mapping Agency ATTN: ATIS, MS A-10	(703) 285-9238	356-9238
c. ADDRESS *(Include Zip Code)* 8613 Lee Highway Fairfax, VA 22031-2137	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA. 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	